

MARINE RECORD

ESTABLISHED 1878.

VOL. XXII, No. 26.

CLEVELAND---JUNE 29, 1899---CHICAGO.

\$2.00 Per Year. 5c. Single Copy.

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

PRESIDENT.		
FRANK J. FIRTH,		Philadelphia.
1ST VICE-PRESIDENT.		
CAPT. THOS. WILSON,		Cleveland.
SECRETARY.		
CHARLES H. KEEP,		Buffalo.
TREASURER.		
GEORGE P. MCKAY,		Cleveland.
COUNSEL.		
HARVEY D. GOULDER,		Cleveland.
EXECUTIVE AND FINANCE COMMITTEE.		
JAMES CORRIGAN, Chairman,		Cleveland.
COMMITTEE ON LEGISLATION.		
GIBSON L. DOUGLAS, Chairman,		Buffalo.
COMMITTEE ON AIDS TO NAVIGATION.		
GEORGE P. MCKAY, Chairman,		Cleveland.

UNDERWRITERS LIABILITY-WRECKING EXPENSES.

SCHOONER AMERICAN UNION.

A number of very important points have been decided in this case by Mr. Justice Harlan, presiding in the Circuit Court of Appeals, for the Seventh Circuit at Chicago.

The schooner American Union, owned by Mrs. Godman, of Chicago, and in command of James P. Godman, on the sixth day of May, 1894, was stranded at Thompson's Harbor, Lake Huron. At the time of her stranding, she was insured by a number of insurance companies to the amount of six thousand (\$6,000) dollars upon a valuation of nine thousand (\$9,000) dollars. Capt. Godman employed the firm of Gilchrist & Fletcher at Alpena to send tugs, lighters, pumps, etc., to the vessel's assistance, and they were employed in and about trying to save the vessel until the 14th, when Capt. Sinclair representing the insurers, arrived and rendered assistance in wrecking. On the 17th, a heavy gale sprung up and broke the vessel to pieces, there being about \$300 worth of wreckage saved and this was turned over to Messrs. Gilchrist & Fletcher.

On the 18th day of May, for the first time, a written abandonment was made to the insurers. This was after the vessel was an actual total loss. The bill of Messrs. Gilchrist & Fletcher was about three thousand (\$3,000) dollars, and to recover this they brought suit against the insurance companies and the owner, but before the trial, dismissed their case as against the owner. The defense set up by the insurance companies was:

1. That at the time that Gilchrist & Fletcher were employed, Mrs. Godman had an uninsured one-third interest in the vessel and ought to be liable for one-third of the bill for wrecking.

2. That under the Limited Liability Act of 1884, the insurance companies were not liable beyond the value of the wreckage saved, and as this has been delivered to Gilchrist & Fletcher, there was no further liability.

Judge Grosscup in the District Court held the insurance companies liable for two-thirds of Gilchrist & Fletcher's bill and decided that the Limited Liability Act did not apply.

Gilchrist & Fletcher then appealed and contended that they were entitled to the whole of their bill against the insurance companies, and that the insurance companies not having appealed, should not be heard, except in defense of the decree of the District Court. Justice Harlan, however, held,

1. That by virtue of the abandonment and the retroactive effect given it by law, the insurance companies became sole

owners of the vessel from the beginning of the disaster, and that Capt. Godman was, therefore, their agent when he employed Gilchrist & Fletcher, and the companies were liable for their bill to the full amount.

2. That under the act of Congress creating the Circuit Court of Appeals, there was a trial *de novo* in these courts in all admiralty cases, and that a party could be heard, although no appeal had been taken by him.

3. That under the Limited Liability Act of 1884, each insurance company was liable in the proportion that the amount insured by it bore to the total amount of insurance.

The court seemed to have ignored so much of the Limited Liability Act of 1884 as provided that, "And the aggregate liabilities of all the owners shall not exceed the value of the vessel and her pending freight."

A petition for a rehearing has been prepared, asking the court to say whether or not this part of the Limited Liability Act is valid, and if so, whether applicable to this case, and if not, why not? The decision on this point is awaited with great interest.

Robert Rae, Esq., represented Gilchrist & Fletcher, and C. E. Kremer, Esq., represented the insurance companies.

IMPROVING CHICAGO HARBOR.

The following is an abstract of bids submitted to Major W. L. Marshall, Corps of Engineers, U. S. A.:

FOR DREDGING AND FOR OTHER WORK IN CHICAGO HARBOR, ILL., RECEIVED IN RESPONSE TO ADVERTISEMENT OF MAY 15, 1899, AND OPENED JUNE 15, 1899, BY G. A. M. LILJENKRANTZ, ASSISTANT ENGINEER.

NAME AND ADDRESS OF BIDDERS.	Dredging 1,000,000 cu. yds.		Total.
	Price	Amount.	
1. Lydon & Drews Co., Chicago, Ill.	8.95c.	89,500	\$ 94,499.20
2. Green's Dredging Co., Chicago, Ill.	9 1/4	92,500	97,358.00
3. Hausler & Lutz Towing & Dock Co., South Chicago, Ill.	9 1/2	95,000	99,600.00
4. *Chicago Star Construction & Dredging Co., Chicago, Ill.	7	70,000	73,788.70
5. Carlin, Stickney & Cram, Detroit, Mich.	12 3/4	127,500	132,081.70
6. Fitzsimons & Connell Co., Chicago, Ill.	12 1/2	125,000	129,634.00

* Lowest bid.

It is noticeable that the lowest bidder for the Chicago works is a Chicago firm, and the highest, Carlin, Stickney & Cram, Detroit, bid \$127,500 for dredging 1,000,000 cubic yards, this being \$57,500 in advance of the local contractors. The lowest bidder asked 7 cents per yard for this dredging, while the Detroit firm bid 12 3/4 cents per yard. The difference in totals between the next lowest bid to that of the Chicago Star Construction & Dredging Co. amounts to \$20,711, and the highest \$58,283. Providing that the lowest bidder is awarded the contract and that it is a profitable one to execute there is an easy saving of \$20,000 over the next lowest bid. These bids are so widely at variance that it looks as if any old figures could be submitted on government proposals for river and harbor work. The amount available for the above work is only \$100,000, so that two of the bidders practically ruled themselves out of the competition, one came within \$400 of doing so and two others only from \$3,000 to \$5,000, so that on the face of the bids the lowest contractor was the only one, considering that a certain percentage of the appropriation is usually withheld for contingencies arising during the course of the work. It is stoutly asseverated that no understanding exists among contractors on the class of work for which Congress appropriates millions of dollars annually. District officers of the Corps of Engineers, U. S. A., are not a bit squeamish in stating that some of the bids submitted smack a little too broad of collusion among the bidders, and on this ground alone, proposals were re-advertised for lately with excellent results, so far as the finances of the government were concerned.

PRIVATE PROPERTY AT SEA.

Public opinion in England is now to a large extent favorable to the American proposition to exempt all private property at sea, excepting contraband, from capture in time of war. It is expected that the conference at The Hague will take some decisive action upon this question.

This proposition was submitted to England and other maritime powers by the United States 43 years ago. At that time the United States had been invited to join the Paris declaration of 1856 which opposed privateering, provided for the protection of the neutral commerce, and declared that a blockade, if it should not be effective could not be regarded as valid and binding. The United States refused to join in the abolition of privateering unless the other powers would assent to an agreement prohibiting the capture of ordinary private property at sea in time of war. Our government has concluded two treaties, one with Prussia, which is no longer in force, and another with Italy, which is still operative, recognizing the principle that an enemy's private property, not being contraband of war, must not be captured.

England formerly was opposed to the general adoption of such a rule. But it is now admitted that an enemy cannot be ruined by the capture of his private vessels and goods, because the commerce with neutral countries cannot be effectually prevented thereby. It is believed that if the conference will agree to a declaration that food products shall not be treated as contraband of war, the English government will assent to the exemption of all ordinary private property at sea from hostile capture. An argument in favor of the American proposition is that its adoption will induce some of the great military powers to reduce their naval armaments. This would be an advantage for England, though it would not affect the British policy of maintaining a navy equal in strength to the combined navies of any two other powers.

ADJUSTMENT OF COMPASSES.

The compasses should be adjusted with the dynamo not working, after which the vessel's head should be put upon the different courses with the dynamo running at full speed, and on each course the indications of the compass should be noted with the dynamo running with open circuit and with all possible combinations of the current switched "on" and "off" all circuits passing near the compasses.

These indications should be compared with the dynamo stopped, and any serious deflections of the compasses remedied before the vessel sails. In vessels wired on the "double-wire" system this is not so important as in those wired on the "single-wire system," but at least the effect should be tested of the dynamo running with open circuit.

AT THE tenth session of the trans-Mississippi Commercial Congress held at Wichita, Kansas, May 31, and June 1, 2 and 3, the following is the leading resolution adopted: Whereas, the interests of the whole country, the reinforcements of our navy, the enlargement of foreign markets for our surplus products, the increased employment of our workmen in the mine, foundry, factory, and shipyard, and the training of the seamen, would all be promoted by the restoration of our merchant marine to its former position on the seas of the world. Therefore, resolved, that in our opinion, it is the duty of Congress at the earliest day possible, to enact legislation to secure such restoration by the payment of subsidies to American-built mail carriers and freighters, sufficient to enable them to successfully compete with the subsidized and bountied merchant ships of foreign countries in the carrying of our imports and exports.



DETROIT.

Special Correspondence to The Marine Record.

The steamer V. H. Ketcham found a shoal spot this week in the St. Clair river, on the Canadian side, opposite the Oakland hotel. She fetched up on it and required the assistance of a tug to get her afloat.

Carleton & Cole, of Port Huron, dealers in machinery supplies, have closed their doors. Liabilities, \$4,500. Many of their former marine patrons will be sorry to learn that this old established and generally well liked firm has met with business reverses at this late day, considering that business is on the boom, too.

In order to ascertain the truth as to the reports of overloading, Deputy Collector of Customs Andrew Smith detailed on Sunday two men to check off the number of passengers who went to the Flats on the Star line steamers. When all had embarked on the Greyhound on the return trip they numbered just 1,206, 344 less than the number that she is licensed by the government to carry.

Samuel H. Cramp, the famous Philadelphia shipbuilder, stopped in Detroit this week, on his way east from Duluth. There was a possibility that he was here to consult with Frank W. Kirby regarding the erection of a steel plant on the lakes. Mr. Cramp, however, denied that there were any such plans contemplated, and declined to discuss the rumor that there was such a deal on foot. He was in Detroit on a little personal business, he said.

Through a misunderstanding of signals the Canadian passenger steamer Carmona collided with the tow barge Granada, near Port Huron, on Sunday morning. The weather was quite foggy and the Carmona was crowded on to the shore. Excitement prevailed among the passengers until they realized that they were in no danger. Tugs released the boat and she was brought to Detroit, and placed in drydock. A survey fixes her damage at \$1,000, all above the water line. She will be laid up for four or five days.

Lieut. Byron L. Reed, of the United States revenue cutter service, has been again assigned to this district, after an absence of eight years. The Fessenden, to which vessel he has been detailed, is again in command of Capt. D. B. Hodgson, who took the dispatch boat McCulloch to Hong Kong previous to the outbreak of the war, and was with Dewey at the battle of Manila. Lieut. Reed has whirled around considerably also since he left Detroit. He first served on the old Andy Johnson on Lake Michigan for two years, thence going to Washington, where he spent three years in the Life-saving Service Department, and the last three years he has been attached to the Pacific coast station, patrolling in the vicinity of Seattle, St. Michael's and other ports in the Bering Straits district.

Work on the Star line passenger steamer at Wyandotte has about started. The keel plates at least are laid, and each car load of metal reaching the yard is pounced on in short order, but the work is not steady, and there is no telling when material will come regularly or in such quantities as to make work continuous. It is now understood that Mr. Kirby, superintendent of the Wyandotte shipyard, will leave the employ of the consolidated shipyards company, at an early date, but nothing is yet known regarding his future business intentions, although it is considered very probable that he will take a similar position with some one of the many coast shipyards. Wyandotte stands to lose a highly respected and much valued citizen when "Joe" Kirby changes his place of residence.

Mr. Frank E. Kirby will probably not sever his connection with the Detroit Ship Building Co. inside of a year, at least, it will not be until all the contracts it now has on hand are finished. After that he has made no settled plans, but it is probable he will have no connection with any shipbuilding plant. He has a number of private matters that can with profit to himself be given all his attention. Mr. Kirby thought last spring that his work for the Government was ended, but Uncle Sam recalled him to arrange several transports for carrying troops to Manila. Three of these—the Grant, Sherman and Sheridan—are finished, and of late he has been at work on the Thomas and Logan. He expects to run back and forth between Detroit and New York until October at least. When the new Star line steamer is completed it will mark the one hundredth boat that Mr. Kirby has built. "Several years ago," says Mr. Kirby, "I promised my wife that I would stop building boats when the boats numbered 100." This of course is a very nice dutiful little anecdote. Of the plan for opening a consulting office in New York he is rather reticent. He says that the chance of his doing such a thing is rather slim. "It is certain that Frank Kirby will not be idle long unless by preference," said a vesselman to-day. "His reputation spreads to the Atlantic and the Pacific. If the lake shipyard trust doesn't want to pay his price, there are ocean shipbuilding concerns that will."

BUFFALO.

Special Correspondence to The Marine Record.

The receipts of grain by lake on Tuesday mounted up to 950,000 bushels.

Capt. George C. Burnham has been appointed master of the Russell Sage, to succeed Capt. T. C. Herrick, who resigned to accept a position in another line.

Capt. Coleman Hinckley died at Cape Vincent, N. Y., on Saturday last. He was one of the oldest vessel masters on Lake Ontario, and the father of Capt. Hinckley of the R. & O. Nav. Co.'s steamer Columbian.

The superintendent of the life-saving service for the district opened bids this week for 12 tons of coal to be delivered to the Cleveland station. The contract was duly advertised and sealed proposals asked for.

Capt. Welcome, recently appointed manager of the Erie & Buffalo passenger line, has resigned. He will take charge of the steamer Tampa for Mr. Carter, who recently purchased the wreck from the underwriters, and is now having it rebuilt. Capt. Welcome will go to Detroit to look over the wreck of the Aurora, which will be a consort to the Tampa.

The freight handlers declared the strike off on Tuesday night, and resumed work on Wednesday. They return to work at the old rate of wages, 15 cents per hour, except the Erie men, who were the originators of the strike. They were receiving 14 cents per hour regularly, and 21 cents for overtime. They will now receive 15 cents per hour for regular and overtime work.

In reporting arrivals and clearances the Courier calls the C. & B. side-wheel steamers, propellers, and, under the same list as screw boats. Of course the City of Erie and the City of Buffalo are propelled by steam applied to side-wheels, or paddles, the other propellers are propelled much in the same way by a "wave churner" placed at their stern and known as a screw, therefore, some are moved by screw propulsion and others are propelled by paddle or side-wheels. The only difference is in the way the power of propulsion is applied, and sidewheelers are not screw boats.

Following the precedent of Capt. Dennett at Chicago, fishermen and others are forbidden to use the government piers at Oswego, N. Y. Commander Hanford, U. S. N., stationed at this port as inspector of the tenth light-house district, found the pier around the light-house in an unsightly condition, owing to fish being cleaned there and other dirt-creating nuisances, besides, there is always the danger of fire during the warm summer months. Capt. Graham D. Fitch, Corps of Engineers, U. S. A., in charge of government work in the conservancy and improvement of rivers and harbors within the Oswego district is fully in accord with the recent action taken by Commander Hanford, U. S. N.

Mr. Nelson Holland has disposed of his lumber-carrying fleet, the steamer C. F. Curtis and her tow barges N. C. Holland, T. S. Fassett and Isabel Reed. The barges were built in 1881 and the steamer a year later. The fleet has been well kept up, and as they are small vessels, all under 1,000 tons, and nearer 500 tons net, they will likely be able to carry iron ore for some years yet, as this is the trade they will be put in by their new owners, the Tonawanda Iron & Steel Co., Tonawanda, N. Y. Lumber is about as easy a cargo as hulls can carry, and iron ore one of the hardest, the heaviest, too, for that matter, so that they will need to be handled and kept in trim more carefully than at any time since they were built. The same masters stay in the boats.

H. C. French, general manager of the Union Transit Co., has been connected with the lake business for 35 years, and has therefore witnessed the growth of this now enormous traffic almost from its inception. He was asked if he thought the 500-foot vessels that are to be built by the American Ship Building Co. will be the maximum length for lake vessels. "That is a hard question," answered Mr. French with a smile. "I recall that when the steamer Avon came out in 1877 some of the best known lake men were astonished, and predicted that she would be a failure, owing to her size. Yet the Avon to-day is a small vessel. She is 251 feet long, and 1,702 gross tons. Boats have increased in size since then to what is known as the 400-footers, and I believe 475 feet is about the largest now in commission. Now we are to have boats on the lakes 500 feet long, but I have not the temerity to prophecy what will be the limit of the size of lake vessels."

Robert H. Hebard was found dead in bed last Saturday morning at his country home at Derby, N. Y., where he went Friday evening after spending the day as usual at his office, No. 902 Ellicott Square. Mr. Hebard was one of Buffalo's most widely known transportation managers. He was general manager of the Minneapolis, St. Paul & Buffalo Steamship Co., was agent for the Lake Erie Transportation Co., and had other large interests. For 20 years, from 1870 to 1890, he was assistant general manager of the Union Steamboat Co., under Washington T. Bullard. In 1887 he became connected with the Lake Erie Transportation Co., which is the Wabash Railroad Co.'s lake line, and in 1892 he also became agent for the Minneapolis, St. Paul & Buffalo Steamship Co. Mr. Hebard enjoyed a reputation for capacity and integrity above that of most business men. He was a member of the Buffalo Merchants' Exchange, of Washington Lodge No. 240, F. & A. M.; Buffalo Chapter No. 71, R. A. M.; Hugh de Payens Commandery No. 30, Knights of Templars, and Ismailia Temple, Nobles of the Mystic Shrine.

CHICAGO.

Special Correspondence to The Marine Record.

Grain freights are firm this week at 2 cents on corn to Buffalo.

Judge Thos. Bradwell has sold the small steamer Bradwell to New Orleans parties for \$5,500.

The old sidewheel steamer Chief Justice Waite is now running, and is receiving a large patronage.

J. J. Rardon & Co. chartered the steamers R. P. Ranney and Britannic for corn to Buffalo at 2 cents.

Capt. Prindiville chartered the steamer Ralph and consort Harold for corn to Port Huron at 1½ cents, the steamer Santa Maria and consorts Wayne and Marvin for corn to Buffalo at 2 cents.

The steamer Petoskey, which was sold by the Northern Michigan Trans. Co. to Hart Bros., will leave the service of the N. M. Trans. Co. in a few days, and go to Green Bay to join the Hart Line of steamers.

At the yards of the Chicago Ship Building Co., the Goodrich Trans. Co.'s sidewheel steamer Chicago is receiving a new walking beam, the sloop yacht Prairie was in dock and had a portion of her lead keel taken off.

The tug Satisfaction, from this port to Buffalo, towing the barge Tracy J. Bronson, was destroyed by fire about 12 miles southeast of Manitowoc, on Sunday last. The crew boarded the barge and made sail afterward, being towed to port.

A small sail yacht capsized off this port on Wednesday and Thurman Malone, of Cincinnati, was lost, his shipmates, Seth Warren and Lou Biederman were picked up by the steamer City of Chicago. The yacht was on a trip from here to Waukegan and her occupants lost their bearings, besides not being able to handle the yacht properly.

It was quite a sight on Tuesday to see the many fine passenger steamers wending their way down the river. The Manitowoc started at 9 a. m. for Mackinaw, and was shortly afterwards followed by the H. W. Williams for South Haven, the Christopher Columbus for Milwaukee, the City of Chicago for St. Joseph and Benton Harbor, the America for Michigan City, and the C. W. Moore for Waukegan.

The excursion steamer Cyclone, which came to Chicago to get part of the good things of World's Fair times, has been sold to go to the Thousand Islands in the St. Lawrence. The purchaser is George B. Massey, a banker of Watertown, N. Y., who pays Herman Dahlke \$5,500 for the boat. The Cyclone will carry 300 people, and is in good shape. The price is considered low. She is now being fitted out for the run down the lakes. The sale of the Cyclone removes one of the active elements in the lake front wars between the excursion boat owners.

The executive committee of the River Improvement Company met at the office of the Lumbermen's Association, in the Owings Building, this week, and decided to submit a list of 25 marine men to Mayor Harrison, with a recommendation for their appointment on the committee, to be named by him, to agitate local river and harbor improvements. Secretary Tunell was instructed to compile the list. The North Side subway question was also discussed, but no definite action was taken, although the sentiment of the majority present favored the proposition.

The vessel men are pleased at the action of the underwriters here in advancing the class of a large number of lake vessels. They say that this is about the same as the insurance companies giving them advance freights on cargoes of all kinds. There are those, however, who say that it was not so much magnanimity on the part of the insurance companies as might appear on the face. They say that the companies saw that too many of the vessels were going this year without insurance, and decided to get down to a basis where they could do business with the owners. There was no loophole for them to get out other than the one through which they crawled. They had sworn, when the high rates of insurance were made, that these would not be shaded in any particular, and they have not been. Elevating the class, however, had the same effect, and it is said to have been prompted by the insurance men. Ordinarily the underwriter would have but little effect upon the classification society, but it is said that even while the underwriters could not force the class down, there is nothing to prevent them writing insurance at the higher class rate. Anyway, about forty vessels have been told to come up to the higher rating.

OUT of 800 men employed in the Marine Department of the Maryland Steel Co., at Sparrows Point, only 100 met at a call for a mass meeting held last Sunday to begin a strike. President James B. Armesworthy, of Oriole Lodge, No. 193, Boilermakers and Iron Shipbuilders of America, was among the first to speak, and he called upon his auditors to be consistent with their action of a week ago, and go out on strike. "If you don't," he declared, "you are not worthy of the name of men. If the managers say they can't give you a nine-hour day, they lie. All of their contracts were made on the basis of a nine-hour day." Out of that 100 just twenty-three voted to go on strike at once. The others preserved a non-committal attitude, and declined to vote either way. Then the wrathful twenty-three lifted up their voices and called their brethren cowards and "stiffs" and other names. Finally, the meeting dismissed itself out into the rain, the chairman leading the way, and the strike question had, for the time being, answered itself.

CLEVELAND.

Special Correspondence to The Marine Record.

Beginning next Saturday the D. & C. Line will make day as well as night trips to Detroit.

Mr. Wm. M. Fitch, of the Cleveland Ship Building Co., is again at his desk, and, although he carries his left arm in a sling, he is steadily improving in strength.

Ashtabula, Conneaut and Fairport are to be dredged and made safe ports to enter throughout the season, but the breakwater work will not be entered into until early next spring.

Bids were opened on Tuesday for furnishing 12 tons of anthracite coal to the life-saving station. The quality called for is of the highest possible grade and to be delivered on or before December 1st.

The steamer City of Glasgow is in dry dock at Lorain for repairs, after stranding at Owen Sound, Georgian Bay. About 50 feet of keel, some new frames and outside planking forward will be renewed. The job will occupy only a few days.

When telegrams came in from Duluth on Monday, offering 2½ cents on wheat, the 70 cent Escanaba ore rate was placed at a discount and 5 cents better had to be paid. This is another indication of the \$1 Lake Superior rate in the fall, and a forerunner for a present increase in coal freights.

It is a pleasure to note that Mr. Luther Allen, secretary and treasurer of the Globe Iron Works Co., has entirely recovered from his recent severe and prolonged attack of fever. Mr. Allen looks, and I learn, feels better than he has done for some years past. From a strictly business standpoint Mr. Allen is the peer of any man in the city.

Most of the out-of-town shipbuilders visited Cleveland this week. Assistant general manager Fitzgerald, of the American Ship Building Co.; A. McVittie, of the Detroit Ship Building Co.; Frank Wheeler, W. Bay City; John Craig, Toledo; Capt. James Davidson, W. Bay City; and F. A. Kirby, Wyandotte, were all here.

The passenger service out of this port is perhaps the best on the lakes. Large, speedy steamers well equipped and especially fitted is the rule, nor is there an old boat in even the excursion business. Every facility for lake trips is to be found in the schedule of sailings of the several lines, and a cruise can be taken at any time from one hour to a week.

Coal shippers are hanging to the nominal rate of 35 cents on soft coal, Ohio ports to Duluth. Vessels are just as firm after 40 cent charters, and 80 cents being offered on ore there is no sense in being detained with coal at even 50 cents. A minimum rate of 50 cents, some of the vessel owners think, should be established at once, as down freights have too long borne the burden of coal carrying on the up trip.

Official number 136,740 has been assigned by the Bureau of Navigation to the steamer Eureka, 2,122 gross and 1,399 net tons, recently completed at the Lorain yards of the American Ship Building Co. for traffic through the Welland canal. As this handy-sized steamer may likely reach the coast she might just as well have been awarded signal letters. She ought to have the code on board if placed in the coast trade.

Towing companies at all lake ports are expected to consolidate their interests this week. Will this kill off all competition? Already two little boats are being figured on to slip in against the two large lines here. Of course they can't get much except a picking here and there, now and again, but will not this be the practice at other ports also, and to what extent will all of these little pickings affect the consolidated interest, now, and in the future?

Capt. James Davidson, W. Bay City, is quite in accord with the combination of interests now forming the Great Lakes Towing Co. It is also said that the energetic captain wields quite a power by carrying a large block of stock in the consolidation. It don't do to reckon Capt. James out of too many of these new departures, as he is quite liable to break through some of the circles and land in the ring on both feet. A 500-foot dry dock and a steel shipbuilding plant is to attract his attention in the near future.

The bidding on the work of constructing the new life-saving station is lively. There are a number of local contractors who would like to get a chance at the government work, and they are figuring very closely on this building. They have expressed great surprise at the specifications which show that the structure is far finer than any of them had anticipated. D. C. Wickum, who is connected with the engineering department of the government, is here to superintend the construction of the station, and will also overlook the erection of the dock on which the house is to be placed. It is understood that all the local bids were too high, ranging from \$9,000 to \$12,000, and they have been rejected at Washington.

On the maiden trip of the Wilson liner, Henry W. Oliver, she carried 6,664 tons of iron ore. Capt. Morton, ship's husband, who made the trip in her, stepped back a few years, mentally, and in conversation a day or two ago said it seems only a short time since we were doing fairly good work in carrying 500 tons of ore and making a dozen trips a season, accordingly the Henry W. Oliver carried more in one trip, occupying a few days, than our steady season's work amounted to in my best sailing days. The Oliver has since made another record and delivered 6,954 gross tons of ore. With the 1 per cent. allowed for moisture the cargo was 7,014 gross tons, which is equal to a little over 7,700 net

tons on a mean draft of 18 feet. This is the largest cargo ever carried from Lake Superior by a steamer.

There is likely to be some close bidding on the Toledo straight channel work, which is to be awarded after proposals are opened in July. Mr. Wychgel, representing an eastern dredge firm, with a capital of ten millions of dollars, has completed soundings and borings along the straight channel, and for nearly a mile beyond its outer projection for the purpose of bidding on the work. A party from California also went out along the line of the channel, and a man representing a Chicago firm learned something about the kind of material that is to be dredged. This looks like fair and adequate competition, and will bring local contractors to their senses when submitting proposals for Government work. Competition is the life of business and a majority of the contractors on lake, river and harbor work can stand a lot of it before they get down to hard pan.

COMBINE OF LAKE TOWING COMPANIES.

The Great Lakes Towing Co., which will control all the leading tug lines on the lakes, will be incorporated in New Jersey this week. The capital stock of the company will be \$5,000,000, of which \$2,500,000 will be preferred, and \$2,500,000 common stock.

It is understood that James H. Hoyt, Esq., of the law firm of Hoyt, Dustin & Kelly, Cleveland, worked the deal through. He will, in all probability be elected as legal counsel for the consolidated interests when it is placed in working order. Mr. Hoyt also worked upon the combination of the shipbuilding interests of the lakes.

The following companies are included in the transaction: The Dunham Towing & Wrecking Co., Chicago; Barry Bros.' Towing line, of Chicago; Lutz Towing Co., South Chicago; Parker-Maxon Towing Co., Milwaukee; Milwaukee Tug Boat Co., Milwaukee; Escanaba Towing Co., Escanaba; White Line Towing Co., Duluth; Inman Towing Co., Duluth; Thompson Towing and Wrecking Co., Port Huron and the "Soo"; Toledo Harbor Tug line, Toledo; Nagle Tug line, Toledo; Huron Tug Co., Huron; Hand & Johnson Tug Co., Buffalo; Erie Tug Co., Erie; Maytham Tug Co., Buffalo; Conneaut Tug Co., Conneaut; Ashtabula Tug Co., Ashtabula; Fairport Tug Co., Fairport; Cleveland Tug Co., Cleveland, and the Vessel Owners' Towing Co., Cleveland.

It has been decided also that each city will have a management selected by the trust, but the general operations, schedule of rates for towing and other matters will be dictated from the general offices to be located at Cleveland.

ANOTHER LARGE DRY DOCK.

Capt. James Davidson, West Bay City, Mich., will break ground next week for a wooden dry dock to be 500 feet in length, about 60 feet width at the gates and to carry 13½ feet over the miter sill on the best stage of water. All of the preliminary work has been accomplished and work on the new dock will be pushed to completion as fast as is found consistent with thorough and permanent construction, so that, in addition to the present dock owned and operated by James and James E. Davidson, and known as the Bay City Dry Dock, they will control the only dock on Lake Huron capable of accommodating modern built tonnage.

Capt. Davidson's eldest son, James E. Davidson, is one of the most talented and progressive men in shipbuilding circles, as well as in the general management of floating property, and a younger son, who is now nearly through with his academical training, is applying every energy to the acquirement of the shipbuilder's art and cognate interests. Capt. Davidson is a very wealthy and influential man; he is also energetic and progressive, moreover, his sons are "chips of the old block," intend to, and will follow in their respected father's footsteps in the marine industry. Under these conditions, Capt. Davidson, like a well known Cleveland shipbuilder, will offer every facility and inducement for his sons, not only to take up his already well established industry, but to augment same by the establishment of a modern equipped yard for the construction of steel vessels, their boilers, engines, etc.

It has been said that Capt. Davidson, (who has built more large wooden vessels than any other lake builder,) is wedded to the joining together of wood and iron, or wood with iron. This is so to a certain extent, but, as we have said, Capt. Davidson is very energetic and a good business man withal, and he no doubt recognizes that a metal vessel is not only a good poor man's ship but that powerful syndicates will float and control nothing else; likewise, it is the present and future material for vessel construction, hence, the logical result, and consequently the establishment of a commodious plant in the near future.

ORDERS CHANGED.

A Washington special states that Secretary of War Alger has telegraphed Congressman Sheldon, at Houghton, Mich., that the order detailing Major Sears, in charge of Government engineering work in Porto Rico, has been countermanded. This action was taken in compliance with numerous requests made of the Secretary of War while on a recent tour of the lakes, that Major Sears be left in charge of the works in the Lake Superior district.

DAMAGES—Action for Collision.—Expense incurred by a libellant in replacing certain papers lost by him in a collision is not recoverable as an element of damages, being too remote. *Jacobsen et al. vs. Dalles, P. & A. Nav. Co.*, 93 Fed. Rep. (U. S.) 975.

FLOTSAM, JETSAM AND LAGAN.

Clement Yeskey, fireman on the Walter Vail, was drowned in the river at the shipyard of Burger & Burger, Manitowoc, on Sunday last. The body was recovered next day and relatives notified. He was 24 years of age and his home was at Manistee.

The dredge Champion burned at Toledo this week. Capt. William Rooney said she was worth something more than \$15,000, and that she was insured for about 35 per cent. of her value. He cannot say whether he will rebuild or not. She is a constructive total loss.

Sixty-two vessels are being built at the several shipyards on the Delaware River between Philadelphia and Wilmington, Del. Never before has there been such a great amount of work on hand at the yards, and there are contracts ahead for a year's labor in shipbuilding.

A fresh gale prevailed at Menominee on Wednesday and a raft of 500,000 feet of logs, owned by Donovan & O'Connor, was carried away, and will prove almost a total loss, as it would be quite expensive to collect them. Much damage was done to the docks along the shore.

Eastern capitalists have submitted a proposition to the business men of Menominee to build a plant for the manufacture of structural steel at an estimated cost of \$3,750,000, which will furnish employment to 6,000 hands. The buildings are to consist of a blast furnace plant, an open-hearth steel plant, a Bessemer steel plant and a construction plant, the main rolling mill.

The White Star Steamship Company, which for many years has been prominent in the trans-Atlantic service, has now decided to compete for the Australian trade and has established a branch to ply between Liverpool and Sydney. For this service five twin-screw steamships have been built for the line by the Harland & Wolff Shipbuilding Company. The first of these steamers, the *Afric*, of 11,815 tons, was launched last November. The *Medic*, a vessel of the same type and size, was launched the following month. These are to be followed by the *Persic*, the *Runic* and the *Suevic*, with which fleet it is intended to maintain a monthly service between Liverpool and Australia. The *Medic* is scheduled to sail from Liverpool on August 3.

In an article on the work of the Weather Bureau in the West Indies, the Cleveland Plain Dealer winds up with the following panegyric of the service: "The value of the service rendered by the Weather Bureau to the agricultural and mercantile, as well as marine interests is incalculable, and increases with every extension of its limits of observation. No department of the federal service renders a greater proportionate return for the money expended on it, and the public will support Congress in liberal appropriations for developing its powers and extending its sphere of usefulness." "Holy man of the mast!" Is the work of the weather sharps on the lakes to be placed on a par with that of the Light-House Board, the Corps of Engineers, U. S. A., or Life-Saving Service, or half a dozen other departments? The Department of Agriculture may furnish valuable information to agriculturists and the Weather Bureau branch of that department may prognosticate changes that interest fruit merchants, but all hands know that it doesn't do much, if anything, for the lake marine community. Though for that matter the more liberal the appropriations made by Congress for this or any other department the easier it will be to make some sort of a showing. A majority of the forecast officials probably detest marine work anyway. The official at Chicago has just recommended vessels to always seek a lee shore in a hard gale of wind and for such advice (?) appropriations are asked.

MARINE LETTERS ADVERTISED AT DETROIT, MICH., POST OFFICE, JUNE 28, 1899.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Alguire, N. H.	Horner, Jeff., Str. Venice.
Bearse, Ed.	Johnson, F. M., Str. Cambria.
Bradley, J. W., Str. Zenith City.	Kipp, Milford.
Berens, J. C.	Manns, Dan., Str. Zenith City.
Bassett, Earnest H.	Moran, W.
Baker, Mrs. C. C., Sch. Armenia.	Moran, H.
Breen, Jas., Bge. Granada.	Morehead, John, Str. Pickands.
Beaton, Alex., Bge. Athens.	Mackenzie, J. A., Str. Mitchell.
Burke, Bert.	McCauliff, C.
Bacon, Geo.	Norris, Wm., Str. Mayriette.
Binney, David	Resicoe, Jno., Str. Bielman.
Crothers, Jas. C., 3, Str. Shenandoah.	Robinson, Ed.
Calaway, B. T., 3	Shanahan, Frank
Cole, Capt. H.	Taylor, W. W., Str. Fay.
English, David.	Williams, James.
Evans, Cyrus W.	Youngs, Wm.
Henderson, Robt.	
Harry, Capt., Str. Manola.	

F. B. DICKERSON, P. M.

BRITISH-UNITED STATES-CANADA.

A London shipping journal seems not to like our recent allusion to Commodore Perry's victory on Lake Erie. It is also possible that they either have, or soon will appropriate the gallant Commodore's battle cry of "Never give up the ship" and ascribe it to one of their own brass bound men-of-war. Of course we hate to rake up old bye-gones and only alluded to the Perry victory in the course of our interchange of opinions with the "Canadian Manufacturer" regarding the desire of lake shipbuilders to have the privilege of bidding on the construction of small naval tonnage. Our London contemporary objects to the imperialism of his own nation being touched upon at any stage, implying that Canada alone is interested in the question of whether citizens of the lake States may be permitted to build naval tonnage or not—forgetting that it was a British and not a Dominion fleet that was wiped out in 1813. Commenting upon a recent article in the RECORD, our British cousin considers that truth telling in some cases amounts to swaggering, hints about our heads being swelled by the recent naval victories over the fleets of Spain, and states that now an Anglo-American alliance is in the wind, American journalists must really behave themselves, must, is good. We quote literally from our otherwise excellent mentor, who evidently is in no mood to hearken to an unpleasant historical episode of his nation's defeat.

"This hero's blood, or ink, is up on the question of the American right to build war ships on the Great Lakes, and he is not content to have it out with Canada, but must needs have a cut at John Bull—the man who stood by the States when they were at the mercy of Europe a little while ago. Out of danger, out of mind; and so the young warrior, forgetful of past favors, writes vauntingly of 'the last whipping that John Bull received on Lake Erie.' We would suggest that he has been reading his history up side down, and would advise him to rest on his ink-stained weapon and leave alone old John Bull, who knows how to give, as well as how to take, a licking."

Our historical part of it is all right, there is no mistake about that, the only wonder is how the Britisher can forget such a well-deserved drubbing. However, London is far away from Lake Erie, and, as the great naval battle took place quite a dog watch or two ago, it is perhaps ruled out of English history. This is how Ohio people regard that period. In 1812, the dull routine of pioneer life was broken by the war and Hull's surrender at Detroit. There were alarms, terror and confusion. In their dread of the British and their savage allies, many families abandoned their homes, stockades were erected, the militia was re-organized and companies formed for the general defence. In 1813 Perry won his splendid victory on Lake Erie over the British fleet of superior force. As we remarked, the event occurred, in due sequence and order, according to time, day and date. There's no swagger about stating so either. So, John Bull stood by the States when we were at the mercy of Europe a little while ago, did he? kind of news, this. Wonder what he was fishing for, or who asked him to stand by? Not the sovereign people through their representatives at Congress, certainly. Long drawn potations of the sweets of success at arms, on land or at sea, don't cinch us a bit, nor is it likely to. We want and will have lots more of it as the years roll by, and, oh, yes, let us call our scribbling cynic to mind regarding that prophecy about the New Zealander standing on a pile of rubbish trying to locate where London had been, and the more apt one about the Star of Empire wending its way to the westward. Over a century of ascendancy and now swiftly and surely approaching the meridian, a point at which Uncle Samuel will act upon the precedent established a little while ago, and command it always to keep there, and remain higher than any other old star or nation. No one needs to be too touchy these times, anyway the truth is history.

ELECTRIC POWER FOR SHIPYARDS.

The shipyard, however, presents some new problems not encountered in the ordinary manufacturing plant, for power is required not only in the shops where regular machine work of all kinds is done, but also for the large derricks and traveling cranes in the yards, an extensive system of tramways, portable drills and other tools for use on the hulls, temporary lighting of the hulls, pumps for dry docks, and for various other purposes. Appliances, like those mentioned, must be ready for use at any and all times, and in different parts of the yard. Furthermore, shipyards, with the exception of those on the Great American Lakes, are located on salt water, and as many of these appliances must operate out of doors, the motors and the conductors leading

to them must be properly protected from salt air and from the weather.

Before the general introduction of electricity in shipyards it was customary to use compressed air for operating riveters and drills, and for other out-of-door work. This not only necessitates an expensive plant for compressing and storing the air, but permanent pipes must be laid wherever the power is required, and flexible pipes must be used in the vicinity of the work. The system is cumbersome and expensive, both in first cost and in operation, while not over 10 to 15 per cent. of the power generated by the engines driving the compressors is realized in effective work.

With electricity, the operating cost is greatly reduced, while an efficiency of from 60 to 70 per cent. is realized in the system. This, of course, means a smaller plant for a given amount of work, and, therefore, a lower first cost of installation.—S. Dana Greene in Cassier's Magazine for July.

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing, given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting. The bearing may be taken when the Sun's center is on the horizon, rising or setting. The three elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.
Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 30..... E. 31° N. = N. 5¼ E. = N. E. by E. ¼ E.
July 2..... E. 31° N. = N. 5¼ E. = N. E. by E. ¼ E.
July 8..... E. 31° N. = N. 5¼ E. = N. E. by E. ¼ E.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION
LAKE MICHIGAN, LAT. 44° N.
Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 30..... E. 32° N. = N. 5½ E. = N. E. by E. ½ E.
July 2..... E. 32° N. = N. 5½ E. = N. E. by E. ½ E.
July 8..... E. 32° N. = N. 5½ E. = N. E. by E. ½ E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.
Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 30..... E. 34° N. = N. 5 E. = N. E. by E.
July 2..... E. 34° N. = N. 5 E. = N. E. by E.
July 8..... E. 33° N. = N. 5 E. = N. E. by E.

LAKE SUPERIOR, LAT. 48° N.
Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 30..... E. 35° N. = N. 4¾ E. = N. E. ¾ E.
July 2..... E. 35° N. = N. 4¾ E. = N. E. ¾ E.
July 8..... E. 34° N. = N. 5 E. = N. E. by E.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone
Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	480,000	565,000	351,000	11,000	
Chicago.....	5,191,000	5,274,000	858,000	332,000	517,000
Detroit.....	160,000	108,000	10,000	8,000	
Duluth and Superior	6,083,000	423,000	792,000	94,000	29,000
Milwaukee.....	61,000	4,000	3,000		27,000
Montreal.....	367,000	145,000	498,000	46,000	10,000
Toledo.....	1,506,000	675,000	194,000	4,000	
Toronto.....	48,000		18,000		9,000
On Canal.....	299,000	69,000	734,000		30,000
On Lakes.....	1,299,000	2,314,000	134,000	45,000	590,000
Grand Total.....	28,843,000	13,105,000	5,907,000	865,000	1,303,000
Corresponding Date, 1898.....	17,225,000	22,424,000	7,609,000	1,017,000	366,000
Increase.....	920,000	504,000		46,000	
Decrease.....			1,344,000		56,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

VESSELS CLASSED.

Vessels classed and rated by the American Bureau of Shipping in the "Record of American and Foreign Shipping" this week are as follows: Ship, A. G. Ropes; barge, Glendower; barge, Marion; screw (tug), Gypsum King, owned by the J. B. King Transportation Co.; screw Jefferson, owned by the Old Dominion S. S. Co.; British tern, Clifton, and British half brig, Dixon Rice.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(Collaborated specially for THE MARINE RECORD.)

Seamen—Lien for Wages—Liability of Cargo for Freight.—For their wages, seamen have a lien upon the cargo for the freight, or a reasonable charge therefor, though the vessel and cargo belong to the same person. *Whitney et al. vs. Tibbol et al.*, 93 Fed. Rep. (U. S.) 686.

Collision—Injury to Moored Vessel.—Where a sailing vessel safely moored to a dock, in a proper place, and unable to move, is struck and injured by a steam vessel, the burden rests upon the latter to exonerate itself from the charge of negligence. *Henderson vs. City of Cleveland*, 93 Fed. Rep. (U. S.) 844.

Care Required of Fire Tug.—A fire tug owned by a city, and forming a part of its fire department, is not exempt, by reason of its employment from the duty of exercising ordinary care to prevent collision with other vessels, though what constitutes ordinary care, as a question of fact, may vary with the exigencies of the service in which it is at the time engaged. *Henderson vs. City of Cleveland*, 93 Fed. Rep. (U. S.) 844.

Admiralty Pleading.—There is no rule of admiralty pleading which renders a libel by a vessel owner to recover freight earned subject to exception for multifariousness and misjoinder because it joins the charterer and another, to whom the bill of lading had been transferred, and asks recovery in the alternative against one or the other, alleging that by reason of certain facts, set out, the libellant is unable to say which is liable; and the court has discretion to permit such joinder, where it will conduce to its own convenience in the trial of the claims, and will result in no injustice to the parties. *Neall vs. Curren et al.*, 93 Fed. Rep. (U. S.) 831.

Ship Brokers—Commissions—Sales—Options—Loss of Vessel—Insurance.—A charter party gave the charterer the option of purchasing the vessel at any time during the charter, and required the charterer to keep the vessel insured, and provided that a "commission of 5 per cent. on the full amount of charter, also on sale of steamer, when sold, is due on consignment hereof, to (the broker who negotiated the charter), ship lost or not lost." Held that, where the ship was lost before an exercise of the option, the broker was not entitled to a commission on the insurance money, as for sale. *Holmes vs. Montauk Steamboat Co.*, 93 Fed. Rep. (U. S.) 731.

Transportation of Frozen Meat.—A steamship company contracted for the carriage of a consignment of fresh meat to a European port, the bill of lading containing a provision expressly exempting the carrier from liability for loss or damage arising from any defect or insufficiency in the refrigerating apparatus of the vessel. The meat became damaged on the voyage in consequence of the failure of the refrigerating machinery to work properly. Held, that due diligence was exercised by the owner of the vessel to provide suitable and perfect refrigerating machinery, and that the damage arose from a latent defect, for which it was not responsible under the terms of the bill of lading. *The Prussia*, 93 Fed. Rep. (U. S.) 837.

Collision—Steam and Sailing Vessels Meeting—Care Required of Steam Vessel.—It is the duty of a steam vessel, and especially of a tug with a tow, when meeting a sailing vessel where there is ample sea room, and the approaching vessel is seen at a distance, to keep at a sufficient distance in passing to avoid all danger, and to make allowance for the uncertainty in the movements of the sail vessel, which is unavoidable; and where she fails to do so, and a collision results, notwithstanding the keeping of her course by the sailing vessel until a moment before, she must be held in fault, and liable therefor, although the immediate cause of the collision may have been an improper movement of the sailing vessel in attempting to extricate herself from the dangerous position in which she was placed. *The E. Luckenbach*, 93 Fed. Rep. (U. S.) 841.

Shipping—Facts Considered.—The Austrian steamship Styria was loaded at an Italian port with a cargo of sulphur consigned to New York, and cleared on April 24, 1898. On the day before, a Spanish proclamation was issued, declaring the existence of a state of war between Spain and the United States, and in which sulphur was declared contraband. On April 27, the master, who had not sailed, commenced the discharge of the cargo, which was completed May 7. Almost immediately after the declaration of war the public prints contained statements of negotiations for the purpose of having sulphur exempted from contraband goods, and repeatedly stated that such efforts would be successful, of which statements the master was aware, and also of the announcement of their success, and he was also notified of such result by one of the shippers before the discharge of the cargo was completed. At the next Italian port, to which he went for a new cargo on May 10, he heard read an official announcement to the same effect, though it had not been publicly proclaimed. Other vessels sailed at about the same time he cleared with cargoes of sulphur, and were not molested. Held, that under the circumstances, it was his duty to wait a reasonable time before discharging the cargo and, as he had reasonable assurance of safety by May 10, he was not justified in such discharge. *The Styria*, 93 Fed. Rep. (U. S.) 474.

THE STEAM TURBINE FOR MARINE PROPULSION.

In January, 1894, a syndicate was formed in England to explore the problem of propelling vessels by means of steam turbines. It was deemed expedient for reasons of economy and also of time (as many alterations were anticipated) to build as small a vessel as possible, but not so small as to prevent her from attaining an unprecedentedly high speed should she be successful.

Ample funds were available and the *Turbinia* was constructed. Her dimensions are: 100 feet in length, 9 feet beam, 3 feet draught of hull, 44 tons displacement. She was fitted with a turbine engine of 2,000 actual horse power, and an expansive ratio of 150 to 1, and also with a water-tube boiler of great power. The turbine was designed to drive one screw shaft, at a speed of from 2,000 to 3,000 revolutions per minute.

Many trials were made with screw propellers of various sizes and proportions, and the best results were obtained with propellers placed some distance apart from each other on the shaft; but the best speeds were quite disappointing and it was clear that some radical defect lay in the propellers. This was corroborated by dynamometric measurements. The excessive slip beyond the calculated amount and the inefficiency of the propellers all pointed towards inefficiency of blade area upon which the thrust necessary to drive the ship was distributed; in other words, the water was torn into cavities behind the blades. These cavities contained no air but only vapor of water, and the greater portion of the power of the engine was consumed in the formation and maintenance of these cavities instead of in the propulsion of the vessel. This phenomenon was first noticed a few months previously in the trials of the torpedo boat *Daring* by Mr. Thorneycroft and Mr. Barnaby and named "cavitation" by Mr. R. E. Froude, F. R. S.

A radical alteration was deemed absolutely necessary. A new turbine engine was made, consisting of three separate engines, high-pressure, intermediate-pressure and low-pressure, each of which drove one screw shaft.

The power of the engine was thus distributed over three shafts instead of concentrated on one, and the arrangement of three propellers on each shaft was adhered to.

The result of these changes was marvellous. The little vessel now nearly doubled her speed; 30 knots were soon reached and finally 32¾ knots mean speed on the measured mile authenticated, which made her the fastest vessel afloat, irrespective of size.

Not only was she the fastest vessel, but at all speeds vibration, which is so pronounced in all fast vessels, especially in torpedo boats and torpedo boat destroyers, was entirely absent in her case. But more important still was the remarkable economy of her engines, for when subjected to numerous exhaustive tests the consumption per indicated horse-power for all purposes at 31 knots speed was found to be 14½ pounds; or in other words, with a good marine boiler, the coal consumption would be considerably under 2 pounds per indicated horse-power, a result better than is obtained in torpedo boats or torpedo boat destroyers with ordinary triple expansion engines.

The vessel's reversing turbine was also altered, giving her an astern speed of 6½ knots; it could bring her to rest in 36 seconds when running at 30 knots speed, and from rest she could be brought up to 30 knots in 40 seconds.—Hon. C. A. Parsons in *Cassier's Magazine* for July.

LONGEVITY OF SHIPS.

The average life of a wooden ship is said to be 15 years, writes Clark Russell in the *Pall Mall Magazine*. This probably was assumed as a basis for insurance purposes, yet a large percentage of wooden ships flourished much longer than 15 years. I could quote many instances of wooden ships which kept afloat an incredible number of years, and 80 out of every 100 were coasters. Two extraordinary instances of longevity in the ships may be worth quoting here. In February 1827, the *Betsy Cairns*, of Shields, sailed from that port with a cargo to Hamburg. She met with a heavy gale from east-south-east, and bore up for Shield's Harbor. The sea was raging on Tynemouth Bar; the ship struck, was driven upon the rocks and lost. What ship was this that was lost in the year 1827? Will it be believed that she was the yacht that in 1688 brought over to England, William, Prince of Orange, and that she was then called the *Princess Mary*? This at all events was claimed for her. How old was she when she carried the Prince?

KENNEY FLUSHOMETERS ON STEAM YACHT NEAIRA.

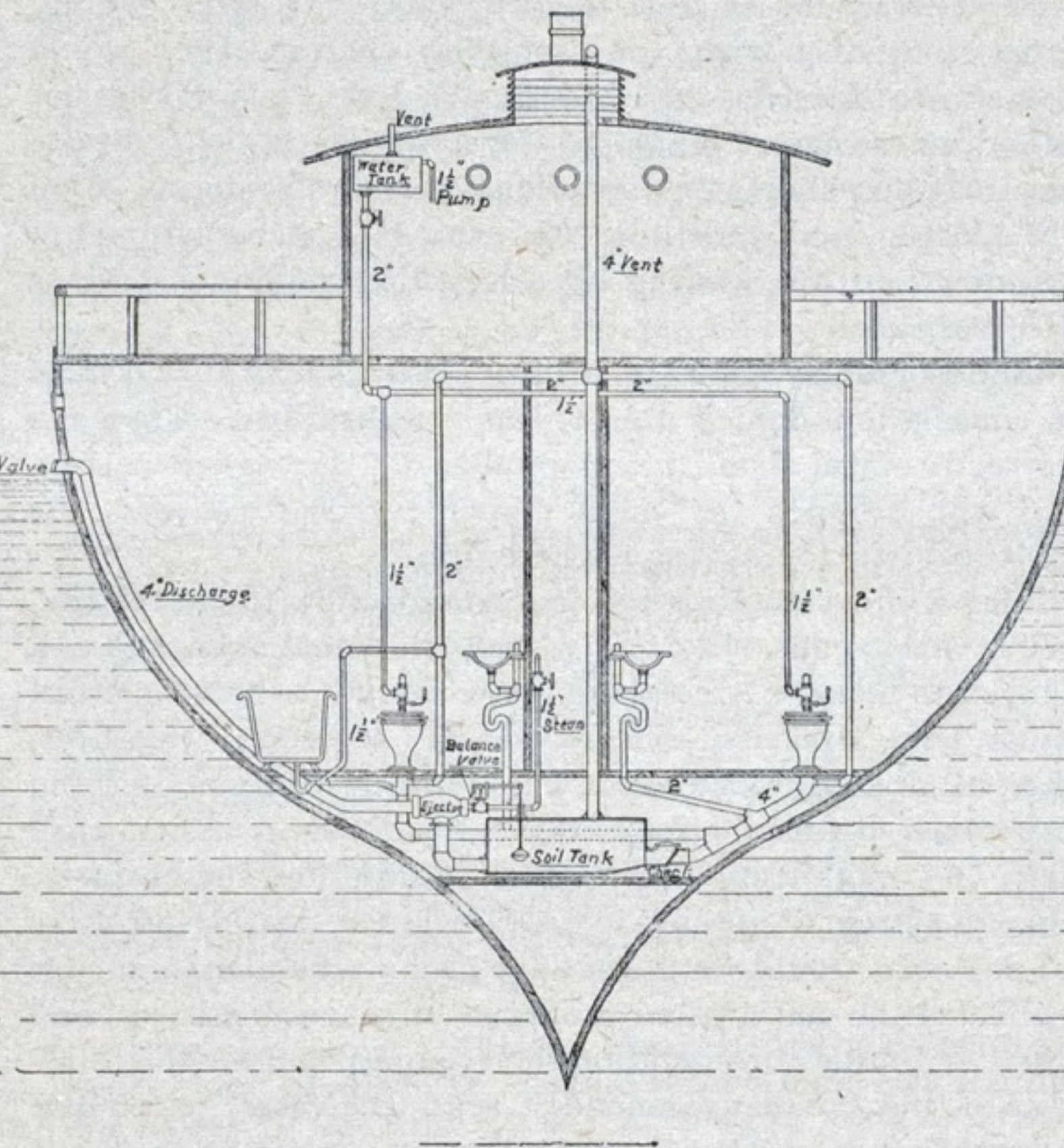
The accompanying cut shows a new system of plumbing, employing the Kenney Flushometers made by The Kenney Company, 72 Trinity Place, New York, used in equipping the new steam yacht *Neaira* belonging to Commodore Chas. A. Gould of the American Yacht Club.

It has attracted considerable attention and favorable comment from expert plumbers, sanitary engineers and others, and is applicable to all low free board vessels.

The supply is obtained from a pump pressure through a 1½ inch pipe carried to a water-tank which is vented in order to prevent its becoming water bound. From this tank a 2 inch vertical pipe is carried down to a point just below the decks and is there branched into 1½ inch for each closet. The waste from the water closet is connected with that of the baths and sinks and carried through a check valve into a soil tank in the hold of the vessel. This tank has a capacity of over 200 gallons.

The vents are carried by a 4 inch pipe and ventilates through the smoke stack of the vessel which consumes all gases and odors. The check valve at the point where the waste pipes connect with the soil tank serves as an effectual barrier against back pressure and the entrance of waste water from the soil tank due to the rolling of the yacht.

From the steam pump a 1½ inch steam pipe is carried to a balance valve, which is operated by a float in the soil tank. As the tank fills, the steam valve is opened, starting an



CROSS SECTION KENNEY FLUSHOMETER SYSTEM ON STEAM YACHT NEAIRA.

action which draws all of the contents of the soil tank to an ejector having a 4 inch inlet and outlet, which discharges the sewerage through a sea valve just below the water line of the yacht. The bottom of the soil tank is graded to the 4 inch outlet at the bottom to insure its complete emptying when the ejector acts.

As a double protection in case of accident to the float in the soil tank or to the balance valve, it is suggested that a double byepass be placed between the balance valve and the ejector. This can be connected with both the steam pipe and the water pipe and used in all cases when the balance valve or float for any reason should not operate.

By the use of the Kenney Flushometer with its silent action and cleanliness, and the method here shown, the baths and lavatories are made as perfect as those in any private residence. As all parts are closely sealed and automatic in their action, no sewer gas or odor is possible throughout the vessel.

This system will be recognized as a great step in advance over the noisy and laboriously operated pump closets that have heretofore been thought necessary.

THE first steamer to cross the Atlantic was the *Savannah* in 1819, length, 145 feet; breadth, 26 feet; depth, 16 feet; tonnage, 600; The time occupied on the passage was 26 days.

NOTES.

TO PREVENT the evaporation of water in fire buckets it has been discovered that 15 to 20 drops of oil will form a coating sufficient to obviate the difficulty.

THE centreboard is said to have been the inventor of one Jocosos Swain, a boat builder of Seaville, twenty miles north of Cape May. He secured letters patent on it, April 10th, 1811. Though of so early an origin the centreboard did not become widely popular till after 1850, or about the time the *America* took the famous cup at Cowes.

IN 1840 the foreign mail from England for the United States, carried on the *Great Western*, consisted of two sacks of mail. As late as 1873 a steamer from Europe with 20,000 letters on board was considered a record maker. Today the Cunard steamers and other trans-Atlantic ships carrying what is called a "full European mail," usually bring some two hundred thousand letters, and an average of three hundred sacks of newspapers and printed matter for New York City, not to mention the five hundred and odd sacks for Canada, Mexico, and trans-Pacific countries, and a few United States exchange offices, which are now taken direct to the trains and not handled at the New York office.—From "The Foreign Mail Service at New York," by E. G. Chat, in the *July Scribner's*.

FROM New York comes the news that the fleet of the International Navigation Co. is to be increased by four large passenger steamers to be built on the Clyde. Two of the boats will run in the Red Star line between New York and Antwerp, and two will be placed in the Philadelphia-Liverpool services of the American line. The two intended for the Red Star line will be named *Vaderland* and *Zeeland*; they are to be 560 feet long, 60 feet beam, and 42 feet in depth, with twin screws, a displacement when laden of 20,000 tons and a speed of 17 knots. The two boats for the American line will be called *Marion* and *Haverford*; these will also have twin propellers, their dimensions will be 530 feet by 56 feet by 39 feet, their speed about 13 knots, and they will register about 10,000 tons.

THE steamer *Miami*, of the Lone Star line, which left for the Pacific coast is the last boat of that line, which is to be relinquished for a time. The steamers of the company are sold, and will be employed in a regular service between San Francisco and the Sandwich Islands. Mr. Logan, of Cleveland, surveyed and valued the *Miami* for her new owners, he also equipped and transacted her general business before she left for her long trip to the Pacific coast via the Straits of Magellan. Thus ends the war of rates that existed in the carrying trade along the Atlantic coast, the competition between the Lone Star, Mallory and Morgan lines having brought down the rate of freight between New York and Galveston from 80 cents per 100 pounds to a final 2 cents.

A RUSSIAN proverb says of a man who does not observe things, "He goes through the forest and sees no firewood." The mind sees as well as the eye. Where unthinking gazers observe nothing, men of intelligent vision see into the root of the matter put before their eyes, attentively noting differences, making comparisons, and seeing exactly what things mean. In this way the telescope was invented by Galileo, and this proved the beginning of the modern science of astronomy. Brunel took this first lesson in forming the Thames tunnel from the tiny shipworm. He saw how the little creature bored through the wood with its well armed head, first in one direction and then another, till the archway was complete, and by exactly copying the work on a large scale he was at length enabled to accomplish his great engineering work.

THE fastest passages to the westward made by the Cunarders *Campania* and *Lucania* during the year 1898 between Queenstown and New York, were as follows: *Campania* 5 days 14 hours and 10 minutes; *Lucania* 5 days 14 hours 40 minutes. The average passage or mean of 12 trips was made in 6 days 3 hours 53 minutes by the *Campania*, and 6 days 1 hour 48 minutes by the *Lucania*. The foregoing shows that the *Campania* gained the record as to one trip, but in taking the mean of twelve trips the *Lucania* is slightly ahead. On the other hand, taking the mean of eleven trips to the eastward the *Campania's* average per voyage was 5 days 22 hours 18 minutes, and the *Lucania's* average per voyage 6 days 0 hours 57 minutes, thus giving the *Campania* a slight head bound east. Such exactness in time in crossing the Atlantic could not have been even contemplated a few years ago, and now, it speaks volumes for the engineering skill and proficiency which makes such a schedule possible.



ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,

Incorporated.

C. E. RUSKIN,	-	-	-	-	Manager.
CAPT. JOHN SWAINSON,	-	-	-	-	Editor.
THOS. WILLIAMS, Chicago,	-	-	-	-	Associate.

CLEVELAND,	CHICAGO.
Western Reserve Building.	Royal Insurance Building.

SUBSCRIPTION.

One Copy, one year, postage paid,	-	-	-	\$2.00
One Copy, one year, to foreign countries,	-	-	-	\$3.00
Invariably in advance.				

ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office.

THE MARINE RECORD PUBLISHING CO.,

Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

CLEVELAND, O., JUNE 29, 1899.

ALREADY lake passenger and excursion steamers have been stopped for carrying an excess number of passengers. Owners and agents would do well to issue special instructions regarding this feature of their business.

SPAIN has a few islands left yet which she could farm out or permanently dispose of. The Canaries in the North Atlantic are fairly good little pieces of rock, and the Balearic Islands in the Mediterranean are habitable, though a couple of other resting places on the west coast of Africa are not worth taking over at any price.

A VESSEL'S class and rating to be of any use or advantage to an owner, underwriter or shipper should be a truthful record of a vessel's build, age, structural condition and equipment, certified to after a minute and faithful technical inspection and examination by properly qualified and unbiased surveyors. Any interests, influences or collusion between the above mentioned parties vitiates the vessel's class to that extent, is in derogation of the integrity, disinterestedness, capability and independence of the surveyor, also of the classification society, and re-acts in an evil manner in the transaction of business affecting ship, freight and cargo.

THE new cup defender, Columbia, had her first trial race in Narraganset Bay last Monday with the result that she simply walked past the late champion, Defender. The British yacht, Shamrock, has been launched and will try her paces before crossing the Atlantic. Judging from all published accounts both yachts are built much on the same lines and the types are drawing nearer together than ever before. The United States competitor is no longer the center-board "skimming dish" racing machine, but partakes more of the type of a cruising yacht, or rather something that could stay out all night and take care of herself in all weathers.

THE practice of carrying passengers on cargo boats is being closely ruled against this season, and, as the informant receives half the fine, or penalty, there is no lack of spies to report where a vessel is found carrying passengers without having been licensed. It is a nuisance for the owners of steamers to be pestered for transportation throughout the season, furthermore, it is an imposition on the earnings of a vessel, and in the majority of cases, a discomfort to the master and crew. Exclusively cargo boats is no place for visitors, sightseers or tourists, there are enough passenger steamers on regular routes to accommodate those who wish to travel and pay for their conveniences and privileges. Others should stay at home.

THE WILDCAT.

With good times comes the wildcat, and this genial, if treacherous, acquaintance is now beginning his accustomed prowling, as is usual with him when conditions are favorable. He never seems to want for victims if only the sun be shining bright and the wintry winds lulled to sleep. Then in their fancied security, at peace with themselves and all their kind, the game yield themselves up to the seductive purrings or caresses of the insidious feline who ordinarily makes short work of them.

Our readers would do well to remember in the present wildcat season that there is still such a creature and that his claws and teeth are as sharp as ever. His methods are well known, but that fact doesn't seem to spoil his chances in the least when he can get his work in under auspicious conditions, and when the fool killer is off duty.

Two or three years ago a company was projected to work a profitable industry on a paying basis but investors were shy. Recently, the wildcat came along and took the wheel. He purr to good purpose and the result is that his clients are now the grateful and happy possessors of stock nominally worth \$100; real maximum value \$20. Their satisfaction is based on the fact that they have actually got for \$80 cash, stock worth, as they think, \$100. The idea that it would have been better to have paid \$100 and received \$100 actual value has not yet presented itself to their minds some day it probably will.

If people will invest in such schemes one would fancy that they would at least inquire before, not after buying, what their co-partners pay for their shares. They would sometimes discover that Messrs. Wildcat, Felis, Hawk and others whose names ornament the stationery of the company secured their shares on exceptionally favorable terms, often for nothing, and sometimes for even less than that, and to be consistent, are drawing big salaries for imaginary work as often as not.

Philosophic investors in wildcat schemes may always have a consolation denied the ordinary subscriber. They can correctly affirm about their capital as did the sagacious ship-boy who dropped the cabin teapot overboard at sea: "It isn't lost, sir, for we know where it is."

The wildcat thoroughly understands how to tap the barrel at both ends. Formerly, one competent man was employed to manage a company, now every one-horse concern must have president, vice-president, secretary, treasurer, etc., all drawing salaries for which they give next to nothing in return, because, even if there were room for them they have no qualification or special training for the business. Such a system, if applied to a steamship or floating property of any sort, would mean that five or six ornamental officials collected the anticipated profits in advance as salaries, and then, with due consideration for economy and for the interests of the company generally, send the vessel to sea half manned and in charge of another ornamental galoot. It would not require any very complicated calculation to predict exactly what amount of profit that vessel would make during the season. Watered stock and unnecessary salaries and poor outfit would soon have their natural results.

Wildcat arithmetic still has believers. There are to be found plenty of people who believe pussy when he purrs that twice one is twenty-one, and that .01 is really the same as 10. It is impossible to protect mankind against the consequences of its own folly, but it is a duty we owe to our neighbor, to give him a word of warning, which, even if he neglects it, at all events clears us of responsibility.

THE British are just now considering how best to straighten up the tangle in the Transvaal. They evidently don't want to fight, and they won't run away. In this situation it is a trifle significant that the U. S. S. Chicago has been ordered from Madagascar to Delagoa Bay, thus doubling on her track as it were. The U. S. S. Chicago was in commission to circumnavigate the world, going east about, via the Cape of Good Hope to Brazil, and having reached Tamatavee in the island of Madagascar has since been ordered to return to the Cape, ostensibly to afford protection to American interests in that locality. If the British take the Boer by the horns, which in this instance is Oom Paul, the tussel will take place inland, so that there will be no chance for any action to be taken by war vessels. Of course, neutrals and refugees can flee to the coast and probably get under the protection of the stars and stripes while the U. S. S. Chicago is retained in that vicinity. In any case, it is perhaps more satisfactory to know that she is there and that United States citizens will be taken care of.

STORM SIGNALS.

At a recent convention of Weather Bureau officials, the proceedings of which have just been published, Mr. John W. Smith, Boston, Mass., brought forward some very pertinent and thoroughly practical suggestions relative to the present system of heralding storm warnings by the display of flags.

Any one who has been in the habit of using flags for signaling purposes, will bear testimony to the oft time difficulty experienced in reading the emblems when they are flying end on or nearly so. Vessels have frequently to alter their courses so as to permit of communication being opened, and in fact this is customary, an every day occurrence, and a feature which those signaling easily understand and allow for. Flags exhibited from a stationary point can not be moved or trimmed so as to permit an observer to read their significance, hence, a moving object, such as a vessel, is compelled in many instances to wait until the bearing is altered sufficiently to bring the flags into view, however, in the case of a meteorological weather forecast, as there is only one hoist to read, the limited time will no doubt always be found sufficient to make out the one signal.

Perhaps the most practical suggestion that Mr. Smith offered to the convention, related to the color, form, and signification of hoists, which we may deal with as follows: We have seen that with flags end on, the signal can't be made out, in the second place, if the bunting is only slightly worn, the colors blend and can't be distinguished, more positively so, when passing at some distance from the flag staff, tower or pole wherever the signals may be exhibited from. Then as to form, given two square flags and not able to distinguish their color, the hoist is useless; again, as to signification, the form of flags in the hoist should denote certain information as in the international code of signals, for instance, a two flag signal with a square flag uppermost is an attention or demand signal, calls for prompt reading, etc., while a two flag hoist with a pennant uppermost is known as a compass signal, so that the actual hoist irrespective of colors, etc., bears its own special signification to the observer. Mr. Smith, supported in a measure by Prof. Hazen, voiced the MARINE RECORD's contention of several years ago in advocating the use of drum and cone, star, crescent, or any other easily distinguishable figure of form in preference to the past and present waste of bunting and frequent unintelligible hoists.

In the course of Mr. Smith's address he stated that in discussing the matter of wind signals with the Boston pilots, members of the chamber of commerce, masters, owners and agents of vessels plying the waters of the Atlantic and Gulf coasts, he had heard no expression of dissatisfaction with the flags as now used, he also added that neither had suggestions been offered for improving the signals. This is negative evidence with a vengeance, and he only needed to have said that the signals were never noticed, to prove the utter disinterestedness of the marine community, at, and frequenting the port of Boston. Had Mr. Smith omitted this portion of his address we would have completely coincided with his well considered views.

Mr. Alex. G. McAdie, New Orleans, La., did not agree with those who advocated the semaphore, cone and ball, and other devices—well! we should say, that as Mr. McAdie is now away up a river nearly one hundred miles from the coast, he should not have had the temerity to voice an opinion regarding a maritime code of signaling. On the other hand, he made an excellent plea for wiping out or abolishing signals altogether. In his attempt to illustrate their uselessness he says: A message wigwagged from the shore to a man at sea in a boat without oars and entirely unable to move toward the shore, is of very doubtful value. So we think are Mr. McAdie's opinions of very doubtful value, when he tries to speak of marine signals, also when he would get a man jammed in a clinch, not able to decipher or understand semaphore or wigwag signals, and in danger of a rock-bound coast, with a lee shore aboard, under the above conditions signaling would be superfluous, but assistance necessary. Again he says, a light burning on the shore and obscured by the fog, is valueless. A profound enunciation truly! Then he makes one more staggering assertion by stating that a signal transmitted by air waves as with sirens, may be deflected and rendered misleading. A very Daniel in judgment and a Portia in counsel. Furthermore, storm signals displayed on the roof of a high building in the heart of a great city, are not of much value to the community, the system is too complex and signals are confusing. On the whole, this official considers that the Weather Bureau signals in present use can not be very much improved upon. We

therefore opine that Canal street frequenters or the colored roustabouts on the levees at New Orleans are eminently satisfied with the present methods of heralding prognostications as in use by their local official of the Weather Bureau.

Prof. Moore, chief of the Weather Bureau, is of opinion, that, since we have displayed flag signals for twenty-six years, we may be assured they are fairly successful, and in fact, he didn't think we had much to learn in meteorology from foreigners anyway. Professor Cleveland Abbe confessed that the cone and drum signals had the great advantage of being seen from all directions, but rather objected to their weight, with all due deference to this opinion, the professor evidently forgot about the new metal called aluminum, although any geometrical figure could easily be arranged with a cloth of duck or canvas, and a few feet of cane, wire, or wood, formed into hoops for the drum, cone or ball.

Professor Hazen takes the most advanced and liberal view of this subject, willing not only to see the better plan but to pursue it, not so subservient as to laud the present service to the skies, nor narrow enough to decry other well-tested (if foreign) methods of signaling, and, probably remembering that the international code of signals by which all nations may converse, was originated and codified ready for our acceptance—as p'raps the cone and drum were. We are pleased to quote Prof. Hazen as follows: "In regard to the use of the drum and cone, it is a surprising fact that the Belgians and English, and several other nationalities are using, and have been using these signals for twenty years. (The professor might have said twice twenty.) Now, why do they do it? It seems to me there must be a great deal of merit in that signal. I have thought, when investigation was made some years ago at Washington into these drum and cone signals, that there was too great belief that the flag signal was all right, and not enough thought given to the cone signal. I think possibly we can advance in that direction. I would like to see experimentation continued along this line, to see if the foreigners are right in this matter and we wrong. As to the different shape of the flags, when a flag is tight down to the mast you can tell nothing about the shape. In such cases I think the color very important, and it seems to me that the signals which have been changed from time to time are nevertheless as near the best as can be had, so far as our experiments up to the present time indicate."

Relative to the remarks of the chief of the Weather Bureau that we have nothing to learn in meteorology from foreigners, that we have displayed flag signals for twenty-six years, etc., we can only say, that the chief ought not to dwell upon, travel with, nor in any way depend upon past prestige or ancient history. Who, we ask, will be found to say that the observations or signal system of the service was perfect a quarter of a century ago. The question is, can they not be improved upon now? and we reply with a great, big, emphatic affirmative, nor do we wish to see any lapses into the burlesque of by gone forecasts or the means used for disseminating same.

With one or two notable exceptions, it would appear as if the Omaha convention pivoted on a mutual admiration and congratulatory meeting of the principal officers of the Weather Bureau, rather than a feast of technical wisdom and an interchange of scientific investigations, personal researches and weatherology experiences of the body as a whole, as we presume it was supposed to be.

We like it not, that the present chief of the Weather Bureau imagines the service has arrived at the acme of scientific attainments, derides foreign systems, and, using a figure of speech, shakes hands with himself.

In so brief an article, and with so little space at our command, it is impossible to discuss the proceedings of the convention of the Weather Bureau officials at this time. We can, however, reiterate the statement that Prof. Hazen's views seem to be the most logical offered, that the chief of the Weather Bureau has too exalted an opinion of the code and method of signaling, and finally, from a hydrographic, meteorological, nautical, and an every-day marine standpoint, there is vast room for improvement and advancement so far as the lakes are concerned with the service.

BESSEMER pig iron is now quoted at \$20 a ton in the Mahoning valley and in Pittsburg the price is \$20.75. This is an advance of 100 per cent. in six months and \$2 a ton higher than last week.

THE man who thinks he "knows it all" is generally about as heavy as an encyclopedia.

LAKES ST. CLAIR AND ERIE SHIP CANAL.

Canal projects are in the air these days; from Nicaragua to Duluth, Minn., there are dozens of schemes floating around. Our neighbors on the northern border are also exercised over this method of cheapening transportation, and the project of constructing a canal between Lakes St. Clair and Erie through Canadian territory, is again being brought forward.

The distance through this neck of land is only 13 miles, and there seems to be no engineering difficulties to be overcome. The construction of a canal of this length would save 79 miles of tortuous, and in a measure, dangerous river navigation. The canal would undoubtedly be of advantage to United States shipping. It has been estimated that the tonnage passing Detroit amounts to 32,000,000 tons per season. It is also estimated that at least two-thirds of this amount would use the canal. The charges on this tonnage, at 2½c. a ton, would produce a revenue of \$550,000 a year, enough to finance the enterprise. In addition to this, it is claimed there would be a saving of \$1,014,200 a year to the vessel owners, by reason of the shorter and safer route via the canal, but this estimate involves so many contingencies besides the saving of time, fuel, risks of collision, etc., that any figures would almost do as well as those quoted.

The promoters of this project do not ask for a subsidy of any kind. Therein it differs widely from the Georgian Bay, the Hurontario, the Trent Valley and other Dominion canal projects.

A GREAT, and let us hope an instructive lesson has been given to vessel owners this week regarding the functions of a vessel registry and classification society, and its province in the relation which it stands or bears between the vessel owner and underwriter. Without going into the merits of the class and rating which should not be changed at the caprice of shippers, consignees, or underwriters, and letting this feature of a classification society go by default at this writing, we content ourselves by simply quoting an article sent out by a Chicago news association and printed in several lake dailies as follows:

"To attract more ships in the grain trade marine underwriters have raised the insurance rating of forty vessels and have other changes under consideration in the same direction. Chicago shippers have found themselves in a peculiar position this season, owing to the boom in lake business. With the rail competition of routes around Chicago to the seaboard they have found it impossible to pay more than 2 cents a bushel on corn to Buffalo, and that rate, with the present insurance on grain, will not bring boats here sufficient to do the business. Something had to be done to reduce the cost of lake transportation to meet the rail competition, and the big shipping houses like Armour, Bartlett-Frazier and other firms decided that they must have lower insurance on certain grades of vessels."

"Smarting under the heavy losses of last year the underwriters had adopted the classification which put sail and tow barges in the third class. As freight rates are necessarily based on the highest class ships with the lowest insurance, the classification required owners of vessels of lower rating to pay the difference. To Buffalo the first-class rate was made 30 cents, second-class, 40 cents, and third-class, 80 cents per \$100. To Port Huron first-class was 25, second-class 35, and third-class 75 cents. The same difference was made to Lake Ontario. The result was that owners of vessels in the third-class were required to pay 50 cents per \$100 on their cargo to bring their ships up to first-class. This was a tax on the vesselman of from \$80 to \$140 per trip for every grain cargo. The result was that many ships that would have taken grain from Chicago, were driven into other lines of trade, and finally the shippers to protect themselves, demanded a change in rating."

Was there ever such a travesty in the annals of vessel inspection, class and rating? To meet rail competition, underwriters who had classed shipping too high, have been compelled by shippers to change the rating, or lower the class, so as to make good ships cheaper and cheap ships better. This move will completely mystify foreign underwriters who have capital invested in lake risks. Let us illustrate a somewhat parallel case. A valuable young horse of splendid stock, age arbitrarily placed at 5 years. A veritable old plug said to be 15 years old, and so classed; the race track habitues clamor for more horses of the best stock, with the result that the old broken-down plug is admitted to the same rating. Query, what can be thought of the judges, their rules, classification, or system of rating? It may be remembered that a vessel's classification certificate is to the craft exactly what a passport is to the bona fide traveler. It must be just what it purports to be, no impersonating, evasion or tissue of falsehoods, but a truthful characterization of the individual.

A WEEKLY journal purporting to lean toward the best interests of the marine community, but more distinctly perhaps, a trade picture organ, of mining and questionable statistics, is out this week with a long-winded re-hash of national shipbuilding work, which it has had copied in a number of lake and other dailies, stating that shipbuilders and the United States mercantile marine at large, requires no assistance for its rehabilitation, citing in support of its views that the yards are now full of work. Let's see, the same source was slobbering over the merits of the Hanna-Payne bill a little while ago, and now becomes turn-coat enough to revile such action, this though from the other side of the fence, was to have been expected.

LAKE FREIGHTS.

The most marked feature of the week has been the prompt and numerous charters for Duluth wheat at 2¾ cents to Buffalo. This is a raise of ¼ to ⅜ cent, and from a stagnant freight market to a present brisk one at the increased rate and futures booked at the same figure, which is better than \$1 on iron ore. The Chicago rate has been steady all week with lively chartering at 2 cents on corn. It is stated that the Grand Trunk issued a new tariff to take effect on Monday last, and other railroad lines followed, making the rate, all rail, Chicago to New York, 11 cents per 100 pounds on corn, and 13 cents on oats. The former rate was 17 cents on both cereals. This is a cheaper rate than lake and rail, but there seems to be no effect on lake chartering as yet. However, it may go to show that even if the Escanaba ore rate advanced, nothing better than 2 cents could be had on corn. This again would have a tendency to hold the Escanaba rate to 70 cents.

It is now admitted that 70 cents is the going rate on iron ore from Escanaba, and even 75 cents is said to have been paid to Ohio ports, and is the figure wanted by vessels, though there is no proof of such as yet. That figure has, however, been paid to Tonawanda. Marquette is firm at 75 cents to Ohio ports and 80 cents to Buffalo. No single charters are reported from the head of the lakes. Vessels fixed ahead are kept very busy, and tonnage placed at the 60 cent rate on part season charters are simply throwing away good money every mile they travel these times, when at least 80 cents could be secured on single cargoes, and many now average close to the 7,000 ton limit. Four South Chicago ore cargoes, arrivals in one day, averaged over 6,000 gross tons each.

Coal tonnage continues in good demand, 50 cents to leading ports, Lake Michigan, and the quoted rate of 40 cents to Duluth, with shippers stating that they are chartering for 35 cents. However, 40 cents is freely paid to Portage.

Lumber carrying vessels are in demand at improved rates, and the freight market generally is in excellent shape with brisk chartering at fair living rates, the only kickers being those who chartered the bulk of their tonnage too far ahead.

MORE LAKE SHIPBUILDING.

It is said the Graham & Morton Transportation Co., Chicago, contemplates increasing its fleet by the construction of a \$500,000 steamer, which will be on the order of the famous Puritan. The proposed steamer is to be 450 feet long, and the deal depends largely on the construction of a new bridge at State street that will permit the passage of the new steamer to the docks of the company at the foot of Wabash avenue, Chicago.

C. J. Smith, general manager of the Canada-Atlantic Transit Co., has announced that two freighters of large size will be added to the company's fleet next season. "We consider that boats of the 4,500 to 5,000-ton class are to be about the maximum size for merchandise and grain business of the lakes," said Mr. Smith. "This class is about 1,000 tons greater than the boats in our fleet at present, but we contemplate a couple of additional boats of somewhat larger size than any that we now have. One of these will probably be put in the Chicago, and the other in the Duluth trade. We also expect to run a boat to Ft. William next season."

Other interests are figuring on a fleet of boats for the Welland and St. Lawrence canal trade. It is asserted that when the Canadian Government opens the Soulanges canal, the cost of transporting lake freights to tide water will be decreased beyond the possibility of profitable competition by any other existing route. The cost of transporting wheat via the lakes and Erie canal will be reduced one half, and the same applies to other products destined for trans-Atlantic ports from the Great Lakes. This statement can be taken *cum grano salis*. When open the canal will have cost in the neighborhood of \$70,000,000.

IRA B. BASSETT

GEORGE PRESLEY, JR.

A. R. TRAIN.

BASSETT, PRESLEY & TRAIN,

IRON AND STEEL WAREHOUSE.

Ship Plates; Ship Spikes, Angles, Beams; Channel and Tee Iron; Boiler Tubes; Boiler, Tank and Cooper Rivets; Steel Boiler Plates; Bar, Bridge and Car Iron; Hoops, Bands and Sheet Iron.

BURDEN IRON COMPANY BOILER RIVETS.

THE STANDARD AND ONLY RIVET USED BY ALL FIRST-CLASS BOILER MAKERS IN THE UNITED STATES.

Acme Shafting—We own and control the sale of this celebrated brand and carry a full stock of all sizes and lengths. Boiler, Bridge and Tank Plates, Nails, Boat and Railroad Spikes, Smoke Stack Rivets, Boiler Patch Bolts, Open Hearth Steel.

ARCHES AND STRAPS FOR VESSELS A SPECIALTY.

GENERAL OFFICES:
23 Merwin Street.

Telephones { Main 417.
Main 423.

CLEVELAND

OHIO.

WAREHOUSE:
17 to 31 Merwin Street.

Almy's Patent Sectional WATER TUBE BOILERS.

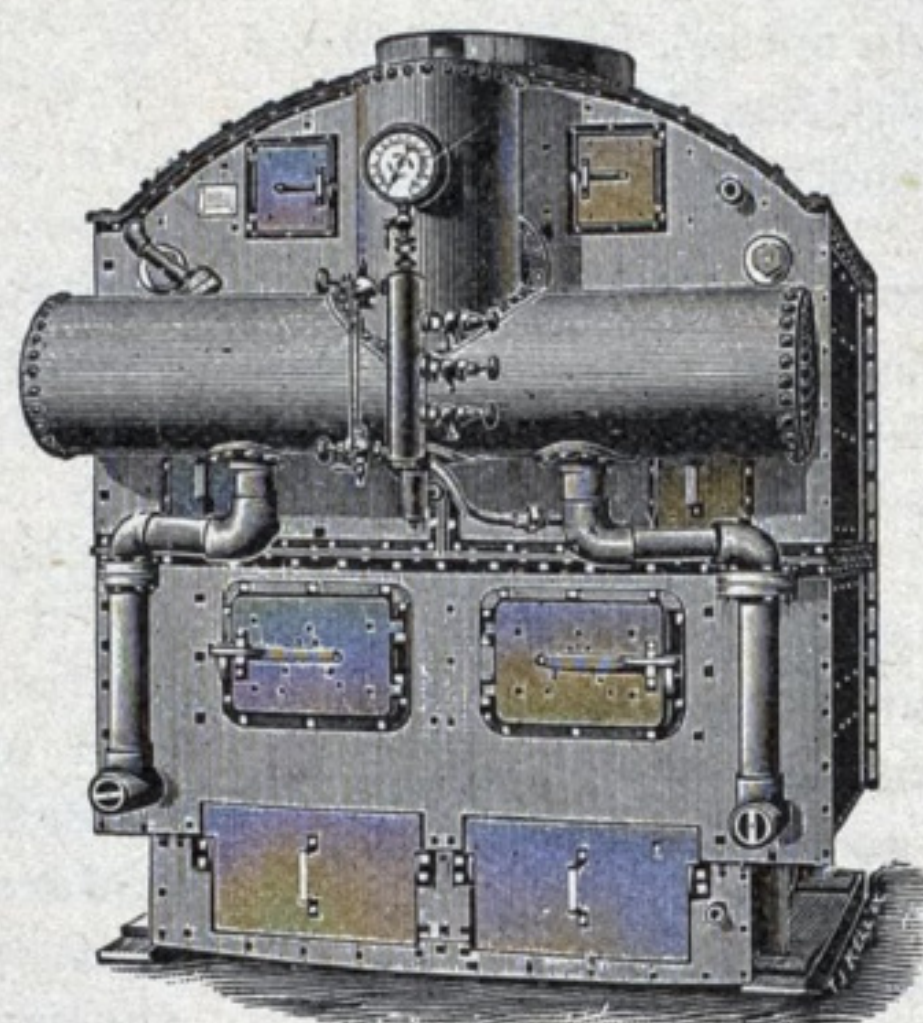
NOW USED IN

21 Passenger Boats from 70 to 160 ft. long.
61 Steam Yachts from 50 to 180 ft. long.

U. S. TORPEDO BOAT "STILETTO."

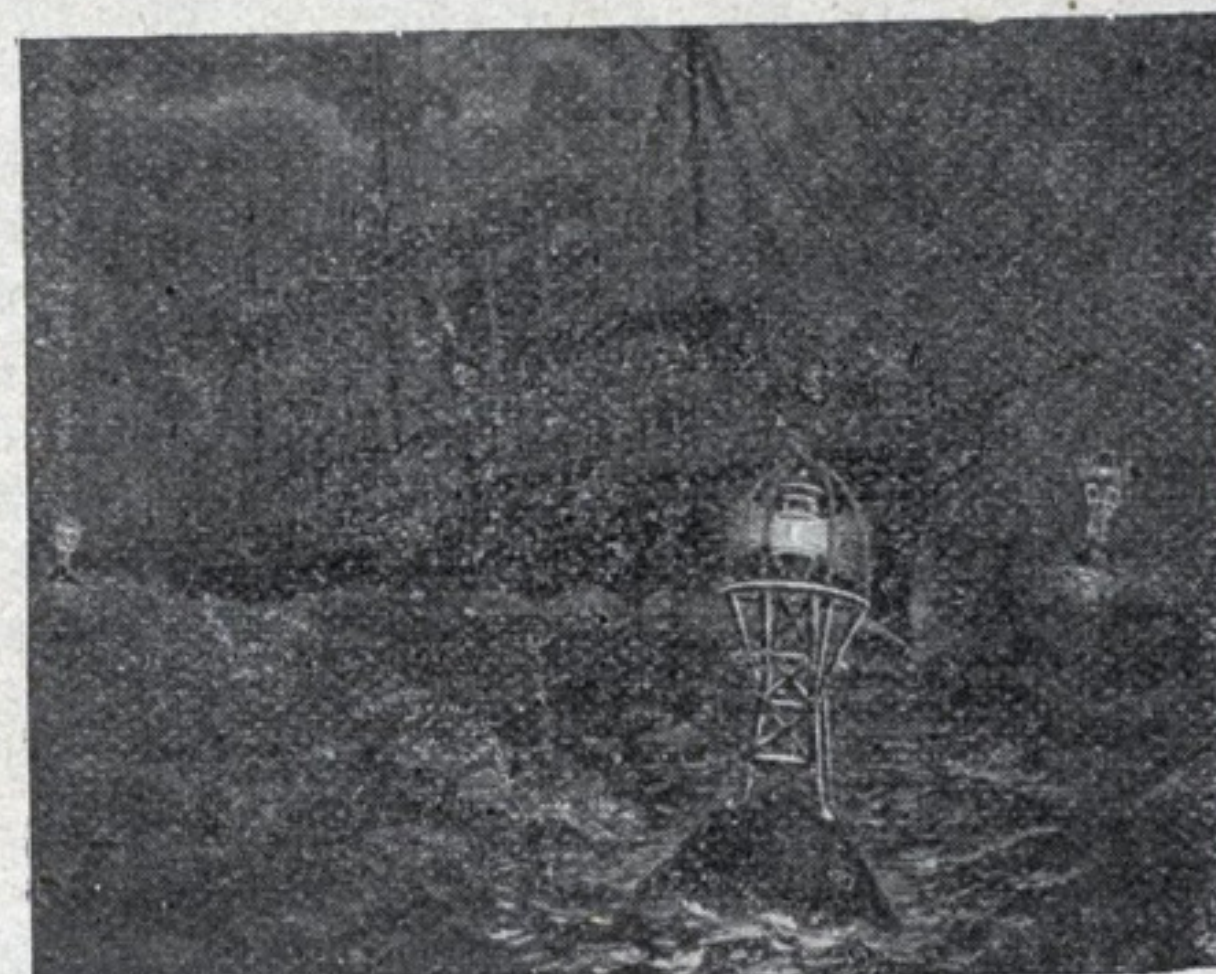
Numerous freight and fishing steamers, launches and stationary boilers are giving most excellent results.

ALMY WATER TUBE BOILER CO.,
178-184 Allens Ave., near Rhodes St., PROVIDENCE, R. I.



Pintsch Gas Lighted Buoys.

Adopted by the English, German, French, Russian, Italian, and United States Light-House Departments for channel and harbor lighting. Over 800 gas buoys and gas beacons in service.



Burn Continuously

from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

Controlled by

THE SAFETY CAR HEATING AND LIGHTING CO.

160 Broadway, New York City.

MAJOR SEARS, CORPS OF ENGINEERS, U. S. A., TO LEAVE DULUTH.

Major Sears of the Corps of Engineers, U. S. A., stationed for the past seven years at Duluth, Minn., has been detailed to establish harbor lines in the harbors of Puerto Rico.

Major Sears is considered to be one of the ablest men in the United States engineering service. Previously to going to Duluth he was stationed at Willett's Point, N. Y. When the great projects for Lake Superior seemed certain to be made, Major Sears was detailed to Duluth. The splendid works that have been constructed at Duluth, at Marquette, Portage Lake and other points on Lake Superior, and the manner in which the details have been planned for many even more important projects, have won the major additional honors and distinction.

Major Sears has been something more than a government engineer. He has introduced advanced ideas in his works and has made valuable suggestions that have been approved by the government and by the engineering world. The splendid breakwater at Marquette is an example of this kind. Major Sears was an early and strong advocate of the adoption of the continuous contract system for work on Lake Superior, and with what success he has conducted the system has been frequently commented upon. He has also done much toward bringing harmony between Duluth and Superior regarding harbor improvement.

It is understood that the duties of the Major will be that of chief engineer of the department of Puerto Rico, and that he will also have control of waterworks and roads. His headquarters will be at San Juan, and he will have charge of about 10,000 men that are engaged on the improvements described. It appears that there is a great deal of work to be accomplished on limited resources, and the commanding military officer there wrote the department that he wanted a first-class man to assign to the civil public works. It is therefore quite an honor to Major Sears to have been selected for such an important post.

Major Sears will go to Puerto Rico for an indefinite period and he will be succeeded at Duluth by Major Fiske, at present in charge of the harbor improvements at Portland, Ore. Major Fiske (at that time Capt. Fiske), was in charge of the river and harbor improvements on Lake Superior for about two years, between the time that Major Quinn was assigned

to another post and the time that he was relieved by Major Sears. At that time Major Fiske did not have charge of the improvements in the Portage Lake canals. These were then in the Milwaukee district and have since been placed in charge of Major Sears. Major Fiske is well known on Lake Superior and is highly esteemed.

PINTSCH SYSTEM OF USING GAS.

There are but few persons, besides those directly interested, that can form any adequate idea of the universal use to which the Pintsch system of using gas has been made applicable. According to a careful statement computed to the first of this year, it is found that the countries herein specified are using the invention to the following extent:

Countries.	Cars.	Gas Works.	Buoys and Beacons.
Germany.....	34,325	71	98
Denmark.....	45	3	21
Great Britain.....	17,800	87	193
France.....	8,210	22	188
Holland.....	3,012	9	58
Italy.....	1,522	4
Switzerland.....	371	1	12
Austria.....	3,111	10	1
Russia.....	1,943	13	13
Sweden.....	379	4	1
Servia.....	154
Bulgaria.....	33	1
Turkey.....	103
Egypt.....	2	3	112
Canada.....	20	2	14
Brazil.....	967	1	31
Argentina.....	984	10
Chili.....	46	1
India.....	6,458	10
Australia.....	1,000	3	29
United States.....	13,405	48	121
Total	90,890	303	892

In addition to the foregoing Germany has equipped 3,566 locomotives, Holland 5, Switzerland 2, Russia 50 and Brazil 31; making an international total of 3,654 locomotives equipped with the Pintsch system.

THE largest steamer ever built was the Great Eastern, built in 1858, 680 feet long by 48 feet deep; tonnage 18,915. She was finally broken up at Liverpool in 1892.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—WISCONSIN.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., June 23, 1899.

CHAMBERS ISLAND LIGHT STATION.—Notice is hereby given that, on or about July 15, 1899, the characteristic of the light at this station, on the westerly point of the bay on the northerly side of Chambers Island, Green Bay, will be changed by reducing the interval between flashes from one minute to 30 seconds. The characteristic of the light will then be: Fixed white varied by a white flash every 30 seconds.

No other change will be made.

By order of the Light-House Board.

FRANCIS J. HIGGINSON,
Rear Admiral, U. S. Navy, Chairman.

A NOVEL PUMP.

During a voyage from Stockholm to New York, more than forty years ago, a ship's master fixed a spar aloft, one end of which was ten or twelve feet above the vessel's pumps, and the other projecting over the stern. To each end was fixed a pulley. He then fastened the rope to the pump rods, and after passing it through both pulleys along the spar, dropped it into the sea astern. To the rope he fastened a 110 gallon cask containing about 60 gallons of water. This cask answered as a balance weight, and every motion of the ship from the roll of the sea made the machinery work. When the stern descended, or when a sea raised the cask, the pump rods descended, and the contrary motion of the ship raised the rods, and, with them, the water to be pumped.

A CURIOUS COINCIDENCE IN SHIPBUILDING CALCULATIONS.

A ship 365 feet long, corresponding with the days in the year, 52 feet beam, equal to the number of weeks in the year, and 31 feet in depth, equal to the days in the month. At 26 feet draught of half of the beam the displacement would be 8,760 tons, corresponding with the number of hours in the year, and the carrying capacity equal to the (day and night) working hours per year, or 6,000 tons.

RECENT TREASURY DECISIONS.

TREASURY DEPARTMENT,
OFFICE OF COMMISSIONER OF INTERNAL REVENUE,
WASHINGTON, D. C., June 20, 1899.
AGENTS OF STEAMSHIP COMPANIES.

Agents of steamship companies, who receive money from persons desiring to make remittances to foreign countries, and issue checks therefor, are not engaged in the business of selling "exchange" within the meaning of paragraph 2, section 2, act of June 13, 1898, and are not required to pay special tax therefor as brokers.

How vessels should be specified in collector's annual reports.—New documents should be given on distribution of former owner's personal estate.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., June 15, 1899.

SIR: This office is in receipt of your letter, dated the 14th inst., stating that a certain "steamboat is tied up and to be sold for debt, the transactions not to be completed" until after June 30 next. In reply to your inquiry, How shall the boat be disposed of in the annual report, the Bureau has to state that her status on the morning of the first day of July should govern the matter.

You submit a second case as follows:

The owner of a steamboat dies and his heirs are running the boat. Should they be required to surrender the old documents of the boat, produce a bill of sale from the executors of his estate, and receive new documents on change of owners?

You are informed that new documents need not be required until distribution by the executor, administrator, or surrogate, as the case may be, shall take place. Thereafter, bills of sale should be presented, made out in accordance with the requirements of the regulations, and the vessel be redocumented accordingly. Evidence should be required of the right of the vendor to transfer the property. The name, place of abode, occupation, and proportion of interest of each owner should be specified in the new document. Respectfully yours,

E. T. CHAMBERLAIN,
Commissioner.

Surveyor of Customs, Wheeling, W. Va.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, report the condition of the eastern freight market as follows:

The declining tendency in grain freights, to which we referred in our last report, has continued, and we regret having to advise fixtures of two prompt boats hence at the miserable figure of 2s 7½d. to Cork f.o., whilst steamers offering at 3s for July-August loading cannot be placed. Larger boats are still in some request for mixed cargo of heavy grain and oats at 2s. 4½d. and 1s 9d. respectively

for picked ports, July-August loading. Deal freights continue fairly active at 42s. 6d. from Bay of Fundy, whilst tonnage for timber and charters from the Gulf, though not quotably lower, is in less demand, owing to the temporary scarcity of timber, in consequence of the extended drought in the lumber regions. The enquiry for time boats continues on normal lines, but special trades requiring steam tonnage are few and far between.

The demand of the sail tonnage continues fair, though by no means very pressing, and, as the supply of vessels is still very limited, we can only report a quiet and very firm market, without any items of particular interest or any change in rates.

RECENT MARINE INVENTIONS.

Recent patents on marine inventions as reported specially for the MARINE RECORD:

626,668. Buoyant propeller, A. L. P. Chasles, Orleans, France.

626,686. Compass card, J. W. Gillie, North Shields, Eng.

626,688. Submerged feathering propeller, E. F. Gorman and P. F. Yost, Philadelphia, Pa.

627,065. Feathering paddle wheel, C. C. Lee, Paducah, Ky.

CHINA'S ENGINEERING WORKS.

The engineering works in China are in a very deplorable state. All the European engineers have been discharged. At the Hangku Iron Works the rails turned out were of such an inferior quality that they had at once to be replaced by rails imported from Belgium. At the state gun factory, where about 3,000 workmen are employed the average daily output amounts to one rifle. The work of the Chinese shipyards consists chiefly of unimportant repairing. There are at present only two iron works in the whole of China where satisfactory work is done, and these are superintended by British and French engineers.

ANTARTIC EXPLORATIONS.

M. De Gerlache, leader of the late Antarctic expedition, sums up as follows the results of his journey to the Antarctic regions:

1. Discovery of a channel which was named the Belgian channel.
2. Discovery of an archipelago formerly believed to be an isolated island.
3. Rectifications of numerous errors in the British admiralty charts and maps concerning Fire Land and the Shetland Islands.
4. The water temperature permits the supposition that there is a continent far to the south.
5. Important discoveries referring to flora and fauna.
6. Discovery of unknown lands, especially David Island.

FREIGHT CLAIMED—NON-DELIVERY.

A case of considerable importance to vessel owners was decided at Montreal on Friday last by Sir Melbourne Taft, acting chief justice of the Dominion Supreme Court.

Messrs. Furness, Withy & Co., of Toronto, sued W. H. Dean, of Toronto, for the sum of \$1,420.35 being the freight on certain cattle shipped on the steamship Baltimore City, belonging to the plaintiffs, on or about the 12th July, 1897. The Baltimore City was wrecked in the Straits of Belle Isle on the 17th July, and became a total loss. Some of the sheep and cattle were saved and salvaged and duly accounted for in general average. One of the conditions in the bill of lading stipulated that the freight, whether payable by shipper or by consignee, was to be paid, "ship lost or not lost," upon the total number of animals embarked, without regard to and irrespective of the number or condition of those landed, and in cash, on demand, without deduction or abatement of any kind. The defendant pleaded that this clause was unjust, unreasonable, and against the public interest and welfare, and illegal, and, further, that defendant never saw the bill of lading, and had no knowledge of the conditions contained therein. It was proved at the trial that the cattle were shipped by Mr. Bickerdike, acting as space broker and insurance broker, and that he received the bill of lading, insured the cattle, and forwarded the bill of lading and insurance certificate to Mr. Dean. Several witnesses were produced on behalf of the plaintiff, who testified that the claim referred to was the usual and ordinary clause contained in the bills of lading covering the shipment of cattle.

In rendering judgment, Sir Melbourne Taft held that the clause was not illegal or contrary to public policy, and that the defendant, Dean, was bound by knowledge of Mr. Bickerdike, the broker employed by him, who shipped the cattle, and accordingly, gave judgment for the amount claimed.

PROPAGATION OF THE FINNY TRIBE.

The work of the Fish Commission is practically completed for this year. According to the officials of the commission, when the reports are sent out on July 1 they will show that it has been the most successful year in the history of the commission.

The great bulk of the work has been in the collection and distribution of the eggs and fry of commercial food fish, and this year more cod, whitefish, pike, perch, bass, flatfish and lobsters have been planted than ever before. Fully as many shad have been planted this year as last, when the high water mark in propagation was reached.

From the station on the Great Lakes, where the white fish, lake trout, herring, pike, perch and wall-eyed pike are collected, 750,000,000 eggs of all kinds were taken, and 500,000,000 fry planted.

TOBIN BRONZE

(Trade-Mark Registered.)

Tensile strength of plates one-quarter inch thick, upward of 78,000 lbs. per square inch. Torsional strength equal to the best machinery steel. Non-corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shafts, etc. Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

The Ansonia Brass & Copper Co.

SOLE MANUFACTURERS,

Send for Pamphlet.

99 John St., NEW YORK.

S. F. HODGE & CO.

MARINE ENGINES,
PROPELLER WHEELS,
DECK HOISTERS,
MARINE REPAIRS.
312 ATWATER STREET,
DETROIT, MICH.

Chas. E. & W. F. Peck,

58 William Street, New York City.

Royal Insurance Building, Chicago, Ill.

C. T. BOWRING & CO.

5 and 6 Billiter Avenue, E. C.,

London, England.



Insurance

BROWN & CO., - - - 202 Main Street, Buffalo, N. Y.
PARKER & MILLEN, 15 Atwater Street, W., Detroit, Mich.
J. G. KEITH & CO., - 138 Rialto Building, Chicago, Ill.
LA SALLE & CO., Board of Trade Building, Duluth, Minn.

Are prepared to make rates on all classes of Marine Insurance on the Great Lakes, both CARGOES AND HULLS.

INCORPORATED 1794.

Insurance Company of North America

CAPITAL, Paid up in Cash,	-	-	-	-	\$3,000,000.00
ASSETS,	-	-	-	-	10,173,488.90

CHARLES PLATT, President.
GREVILLE E. FRYER, Sec'y and Treas.
T. HOUARD WRIGHT, Marine Secretary.

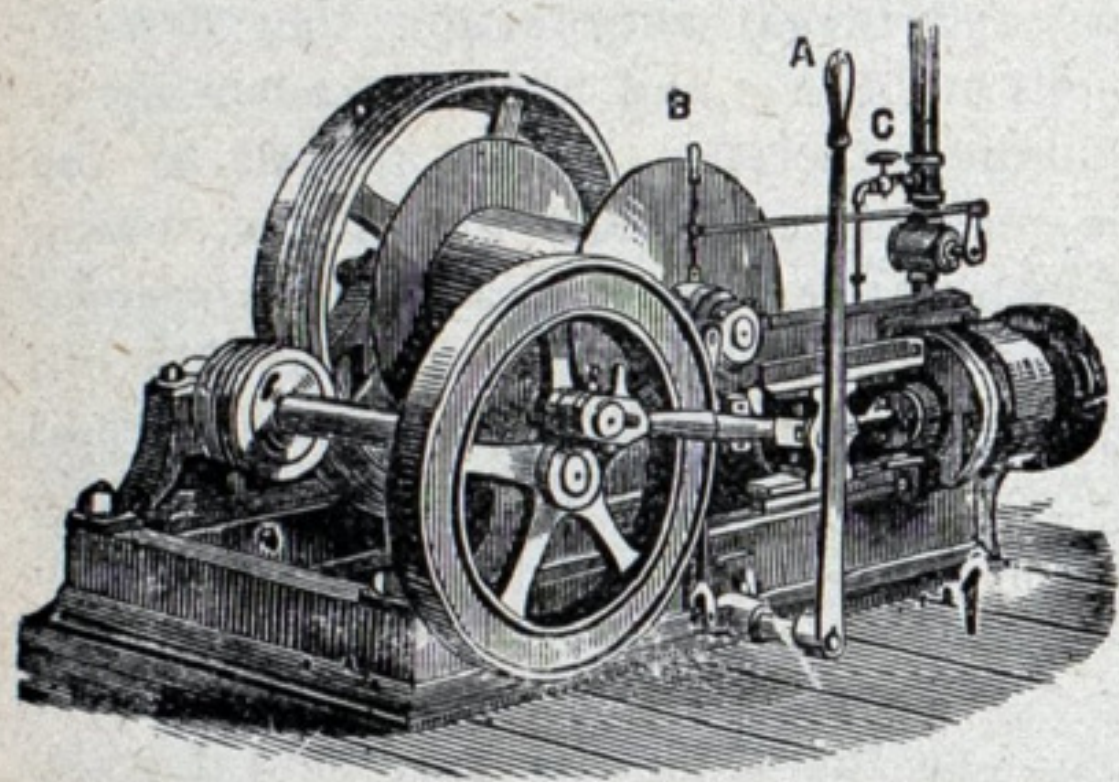
EUGENE L. ELLISON, Vice President.
BENJAMIN RUSH, Second Vice President.
JOHN H. ATWOOD, Assistant Secretary.

Lake Marine Department, GEORGE L. McCURDY, MANAGER,
CHICAGO, ILL.

A. J. MORSE & SON.
DIVING APPARATUS
 140
CONGRESS ST. BOSTON.

WILLIAMSON BROS.

COR. RICHMOND AND YORK STS.,
 Philadelphia, Pa.



HOISTING and SHIP ENGINES
STEERING ENGINES.

With either Fractional, Spur or Worm Gear of Various Patterns to Suit all Purposes.

M. A. HANNA & Co.

COAL, IRON ORE AND PIG IRON.

Steamboat Fuel at Ashtabula.

Large Supplies of Best Quality.

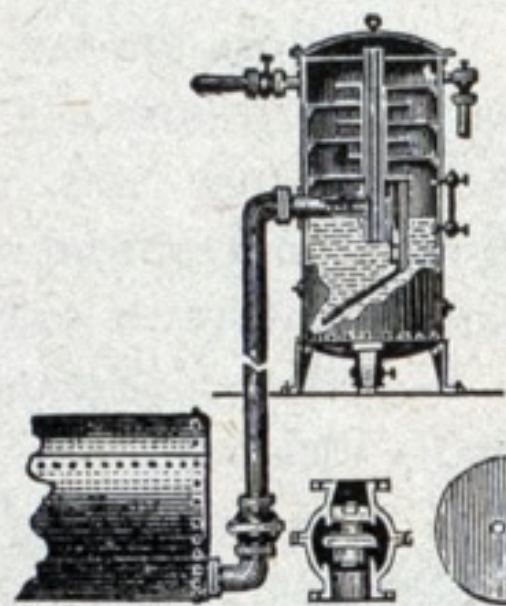
Fuel scow with elevators and discharging spouts. Storage of 650 tons. Discharges 150 tons an hour into steamers while unloading cargo.

LIGHTER

carrying different grades at all times.

MINERS AND SHIPPERS.

MAIN OFFICE, Perry-Payne Bldg., Cleveland, O.



Buffalo Feed Water Heater AND PURIFIER.

Made in all Sizes and to Suit all Conditions.

ROBERT LEARMONTH,

Send for Catalogue.

200 Bouck Ave., BUFFALO, N. Y.

PICKANDS, MATHER & Co.

PIG IRON.
 IRON ORE AND COAL.

FUEL LIGHTERS

AT BUFFALO,
 ERIE,
 ASHTABULA,
 AND CLEVELAND.

At DETOUR, MICH., A FUEL DOCK equipped with Shute capacity of 600 Tons.
 Best Quality PITTSBURGH COAL furnished at any time during Day or Night.

WESTERN RESERVE BUILDING, CLEVELAND, O.



Moore's Anti-Friction
 Differential Chain

HOIST

Adjustable Automatic Brake.
 Self-sustaining at every point
 Highest Efficiency.
 A New Movement.
 A Perpetual Compound Lever
 Powerful, Simple and Durable
 Light, Compact and Strong.

11 SIZES.

Half-Ton to 15 Ton Capacity.

Compressed Air Motor
 Cranes and Hoists.

Hand Power Cranes,
 Trolleys, Etc.

Chisholm & Moore Mfg. Co.

CLEVELAND, OHIO.

Compasses Adjusted

For deviation, and deviation tables supplied. Great facilities for doing the work by day or night.

John Maurice.

Office, 24-26 Market St., CHICAGO.
 Residence, 1155 South Sacramento Avenue.

Use the Vanduzen
 Steam Jet...

PUMP

THE BEST STEAM JET PUMP IN THE WORLD.



It pumps the most water using the least steam.

Its cost is a little more than the common syphon, but will use only one-third the quantity of steam; and it takes coal (? of \$) to make steam.

The only reliable Jet Pump for fires on steam vessels.

A No. 7 Pump, costing \$25.00, will force water through 50 feet of hose and throw a 3/4-inch solid stream of water 75 feet

from end of nozzle without fail as long as there is water at end of suction pipe. It will not freeze. Has no valves.

Every pump guaranteed. Ask your ship chandler for them, or write to us for illustrated catalogue.

THE E. W. VANDUZEN CO., CINCINNATI, O.

WM. WILFORD'S

Matchless Waterproof Cloth
 and Societe Anonyme De Veluwe,
 (Japan Paint).

EDWARD A. BUNKER,

Sole Agent,

20 Broad Street, New York City.

LOW RATES TO PACIFIC COAST POINTS.

The Nickel Plate Road sells excursion tickets at special low rates to San Francisco and all Pacific Coast Points.

Through Palace Sleepers and Superb Dining Car Service via the Nickel Plate Road. Ask agents.

78-29

The Cuddy-Mullen Coal Co.

Miners and
 Shippers of

STEAM COAL

FUELING DEPARTMENT
 FACILITIES.

CLEVELAND HARBOR.—Car Dumper; Eight Pockets, 1000 Tons Capacity; Lighter Steam Derricks.

DETROIT RIVER BRANCH.—Amherstburg: Four Pockets; Three Steam Derricks
 SANDWICH—Fourteen Pockets and Two Steam Derricks.

"SOO" RIVER BRANCH.—Two Docks, (Formerly known as the Anthony and Watson Docks,) Equipped with Pockets and Steam Derricks.

GOOD
 COAL.

COURTEOUS
 ATTENTION

QUICK
 DISPATCH.

General Offices, Perry-Payne Bldg., Cleveland, O.

Youghioghenny River Coal Co.

MINER AND SHIPPER OF

OCEAN MINE COAL.

YOUGHIOGHENY
 GAS AND STEAM

General Office:

Erie, Pa. Long Distance 'Phone 409.

Shipping Docks:

Ashtabula, O. Long Distance 'Phone 76.

VESSELS FUELED AT ALL HOURS

WITH OCEAN COAL ONLY,
 BY STEAM LIGHTER OR CAR DUMP.

ELECTRIC LIGHT.

THE W. L. SCOTT COMPANY,

ERIE, PA.

WHOLESALE DEALER IN

Shamokin-Wilkes Barre ANTHRACITE.

Youghioghenny, Mansfield, PITTSBURG.

Vessel Fueling a Specialty

by steam lighter or car dump,
 at all hours. Electric light.

MAIN OFFICE: SCOTT BLOCK. LONG DISTANCE 'PHONE 440.

FUELING OFFICE: CANAL DOCK. LONG DISTANCE 'PHONE 320.

...Coals



Steamboat Fuel at Chicago.

YOUGHIOGHENY and LEHIGH COAL CO.
J. T. CONNERY, Manager. ARCHIE J. HITCHCOCK, Dock Supt.
MAIN OFFICE: 1238-1242 Chicago Stock Exchange Building.
Long Distance Telephone, Main 5049. 110 LA SALLE STREET.

FUEL DOCKS: No. 1, Michigan Slip and Basin. 'Phone 3046, Main.
FUEL LIGHTER: No. 2, N. Halstead St. Bridge. 'Phone 773, North.
Equipped with 125 2-ton Buckets for Fueling anywhere in Harbor

WE PRODUCE OUR YOUGHIOGHENY COAL, AND GUARANTEE QUALITY.



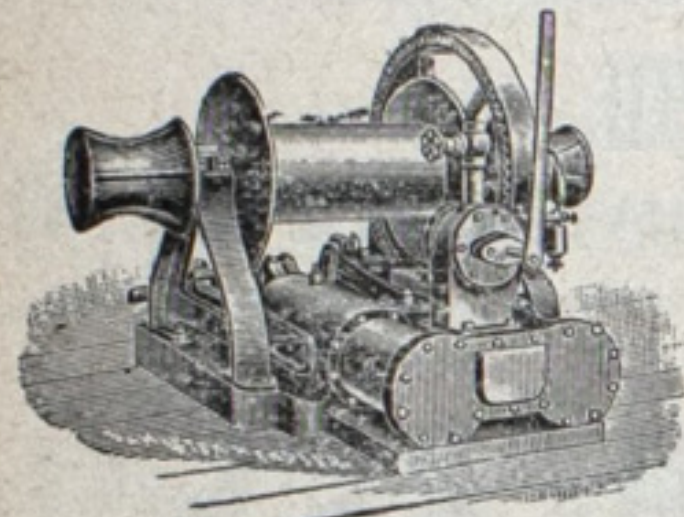
Steamboat Fuel at Cleveland.

THE PITTSBURGH & CHICAGO GAS COAL CO.
J. A. DONALDSON, Manager. N. J. BOYLAN, Fuel Manager.
OFFICE: 420-421 PERRY-PAYNE BUILDING.
TELEPHONE, MAIN 1888.

FUEL DOCKS: No. 1, River Bed, through Valley R. R. Bridge. } Telephone,
FUEL LIGHTER: No. 2, Main River, Foot of West River Street. } West 190.
300 Tons Capacity; Fuel Anywhere in the Harbor.

THE CHASE MACHINE COMPANY, ENGINEERS AND MACHINISTS.

MANUFACTURERS, UNDER THE CHASE PATENTS, OF
Fog Whistle Machines, Hoisting Engines, Steering Engines, Automatic Towing Engines,
Power and Drilling Hammers, and other Machinery. Engineers' Supplies and General Jobbing.
111 ELM STREET. TELEPHONE, MAIN 994. CLEVELAND, O.



Dock and Deck Hoists

ALL KINDS OF
Machinery and Friction Hoists.

Send for Prices
and Circulars.

JACKSON & CHURCH,
Saginaw, Mich.

John E. Thropp & Sons' Co.

BUILDERS OF

Compound and Triple Expansion

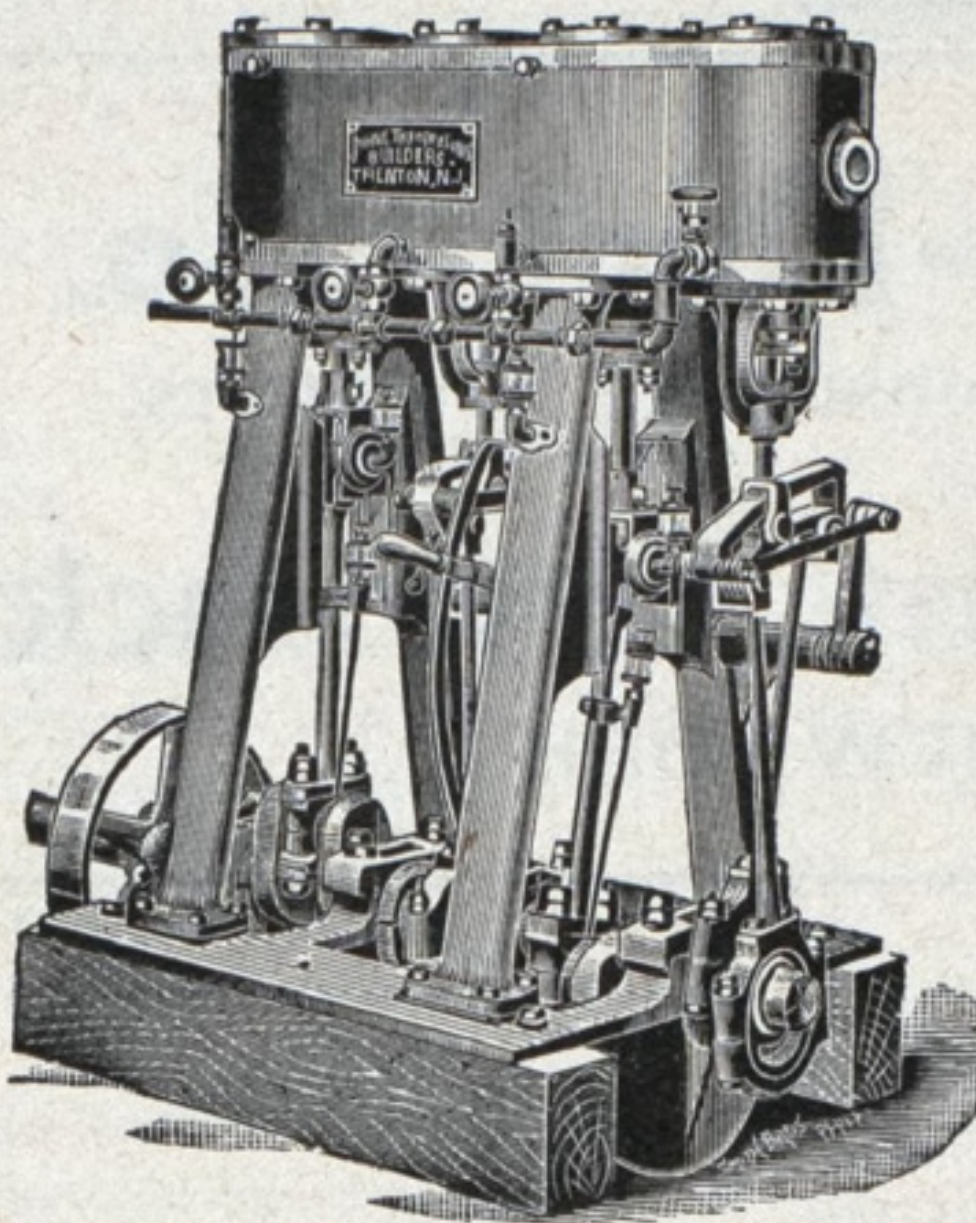
ENGINES,

Boilers, Surface Condensers, Propeller
Wheels, Etc.

Contracts taken for yachts and tugs
complete. Send for photographs of En-
gines and descriptive pamphlet.

Works on Delaware & Raritan Canal Basin.

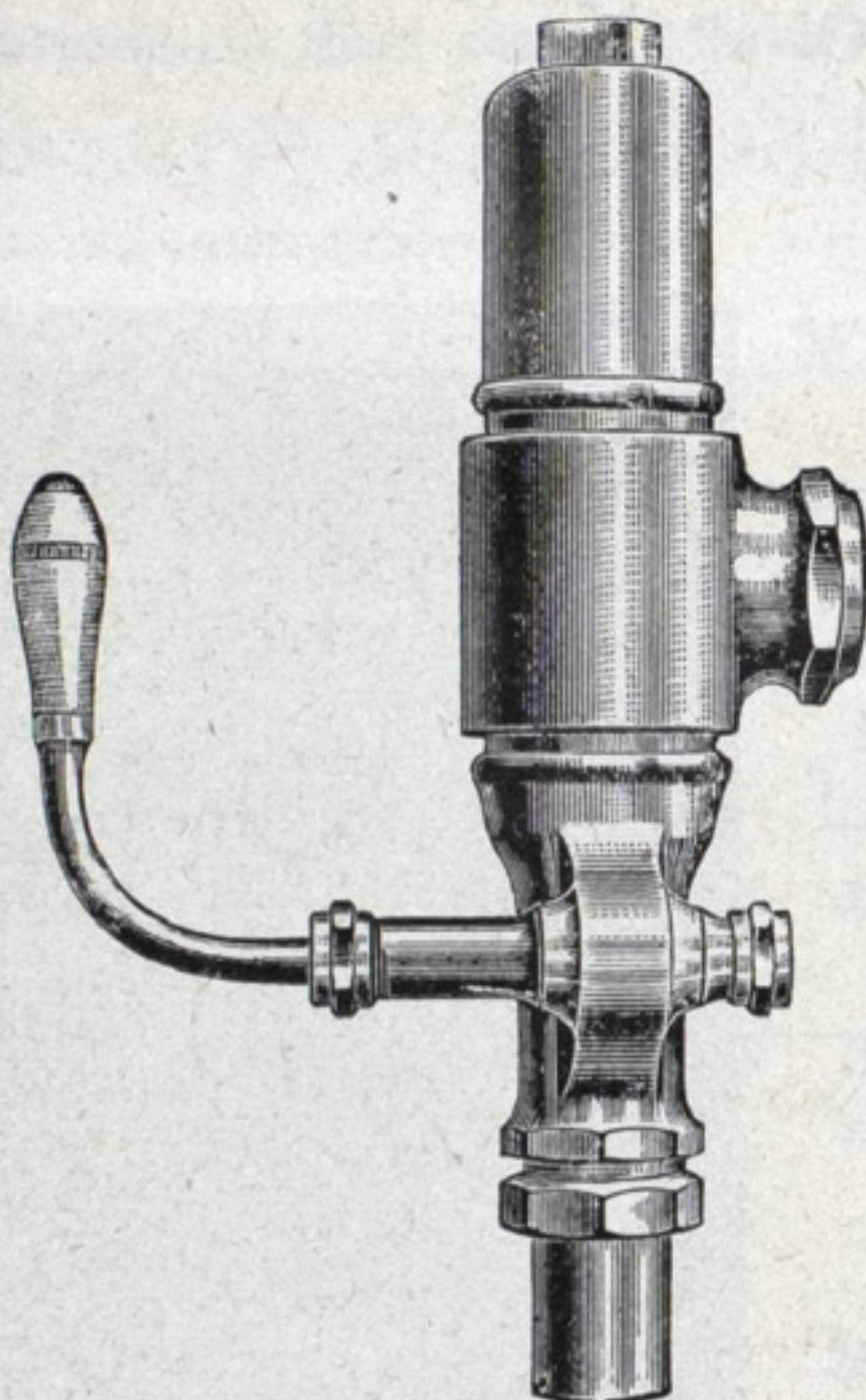
TRENTON, N. J.



Simplest,
Strongest
and most
Reliable.
Changed
from Steam
to Hand or
back by one
lever in less
than one
Second.

No. 8
Beck Patent
Steam and
Hand Steering
Gear.

BUILT BY
Pawling & Harnischfeger,
Milwaukee, Wis.



THE KENNEY FLUSHOMETER

FOR FLUSHING WATER CLOSETS.

THE BEST SYSTEM EVER INVENTED FOR USE ON
STEAM VESSELS.

Owners and constructors of Steamships, Yachts and
Steamboats have found it indispensable. Used by
the U. S. War and Navy Departments. Transport
Mohawk, U. S. Cruiser Detroit, U. S. Gunboat Am-
phitrite. Also Albany Day Line Steamers and others.

THE KENNEY FLUSHOMETER

Is Patented and Manufactured only by

THE KENNEY CO.,

Who guarantee the successful operation of the system.

Send for illustrated pamphlet,

THE KENNEY COMPANY,

72-74 Trinity Place, NEW YORK.

DONNELLY CONTRACTING CO.

896 ELLICOTT SQUARE,

BUFFALO, N. Y.

CONTRACTORS AND CONSULTING ENGINEERS,
HARBOR AND CANAL WORKS, ETC.

SEARCH LIGHTS.

RUSHMORE PROJECTORS

are in almost exclusive use in
all classes of service, and are
specified for finest Steamers
and Yachts.

RUSHMORE DYNAMO WORKS,

Telephone 559.

JERSEY CITY, N. J.

U. S. HYDROGRAPHIC OFFICE CHARTS,

Books of Sailing Directions, Etc.,

ARE FOR SALE AT THE

...OFFICE OF...

THE MARINE RECORD,

Western Reserve Bldg.,

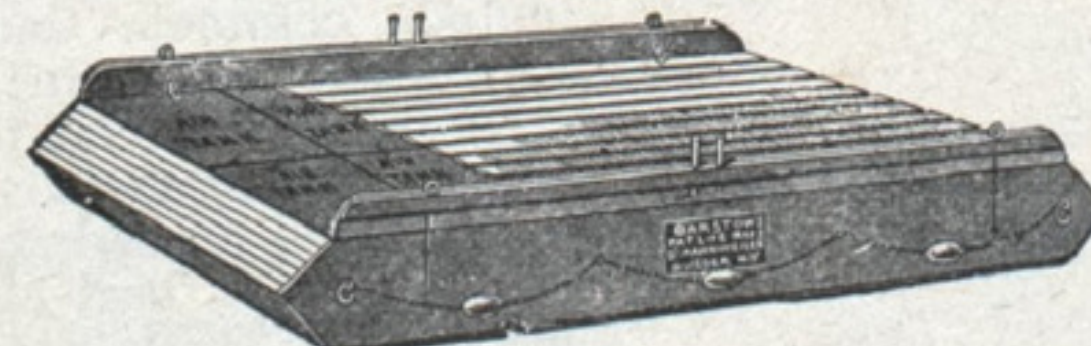
CLEVELAND.

NEVERSINK CORK JACKET AND LIFE BELT.

Warranted 24 lb. Buoyancy and full Weight of Cork, as required by U. S. Inspectors. Consolidated Cork
Life Preservers. Superior to all others. Rings Buoys and Fenders. SAFEST CHEAPEST.
Approved and adopted by U. S. Board of Supervising Inspectors.
Also adopted by the principal Ocean, Lake and River Steamer Lines as
the only Reliable Life Preserver. Vessels and trade supplied. Send for
Catalogue.
Awarded four medals by World's Columbian Exposition.



METALLIC
and
WOODEN
LIFE
BOATS.



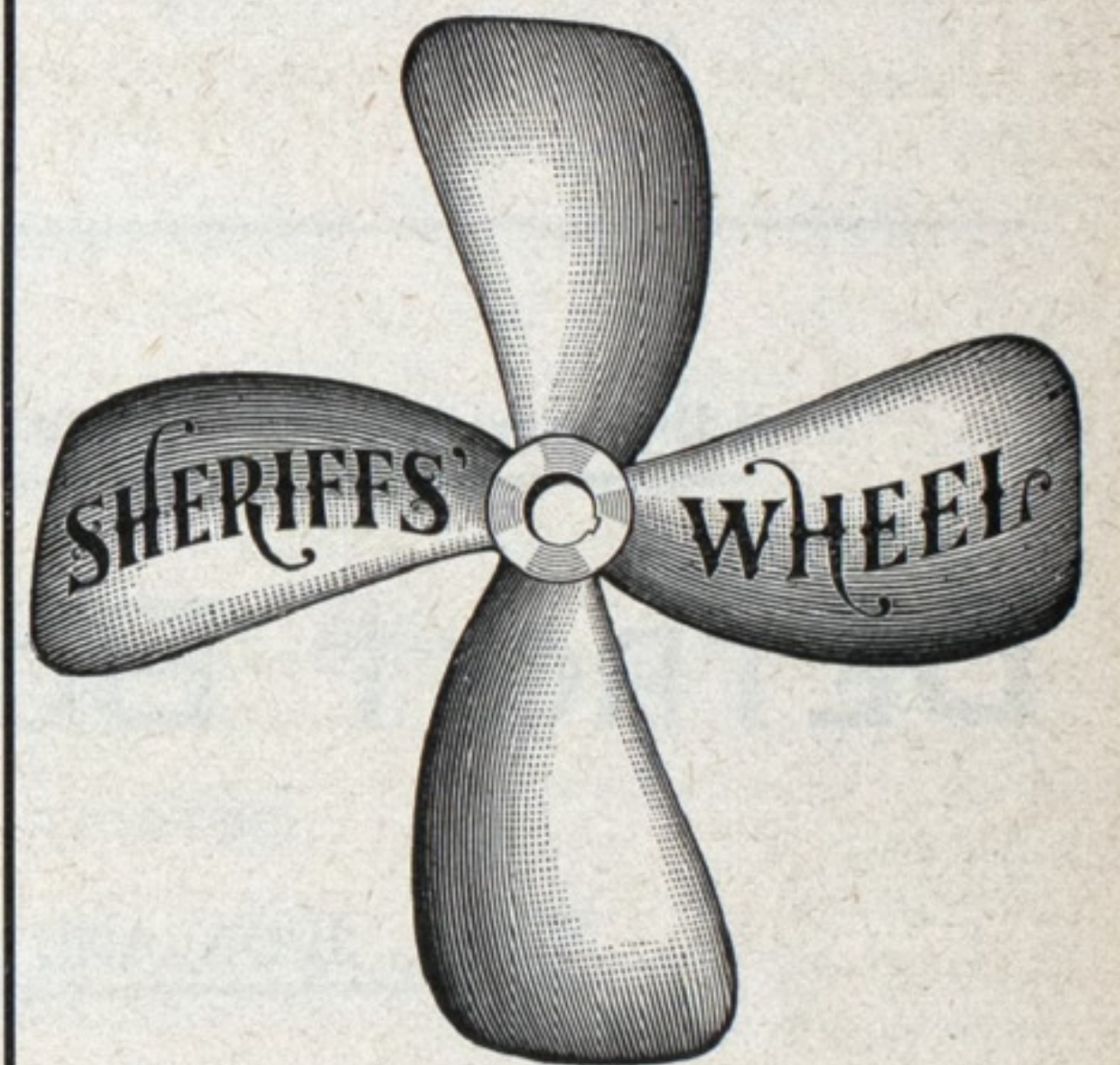
Metallic Life Rafts, Marine Drags.

Manufacturer of Woolsey's Patent Life Buoy, which is the lightest,
cheapest and most compact Life Raft known. Send for illustrated cata-
logue. Get our prices before buying elsewhere.

D. KAHNWEILER'S SONS, 437 Pearl St., New York City.

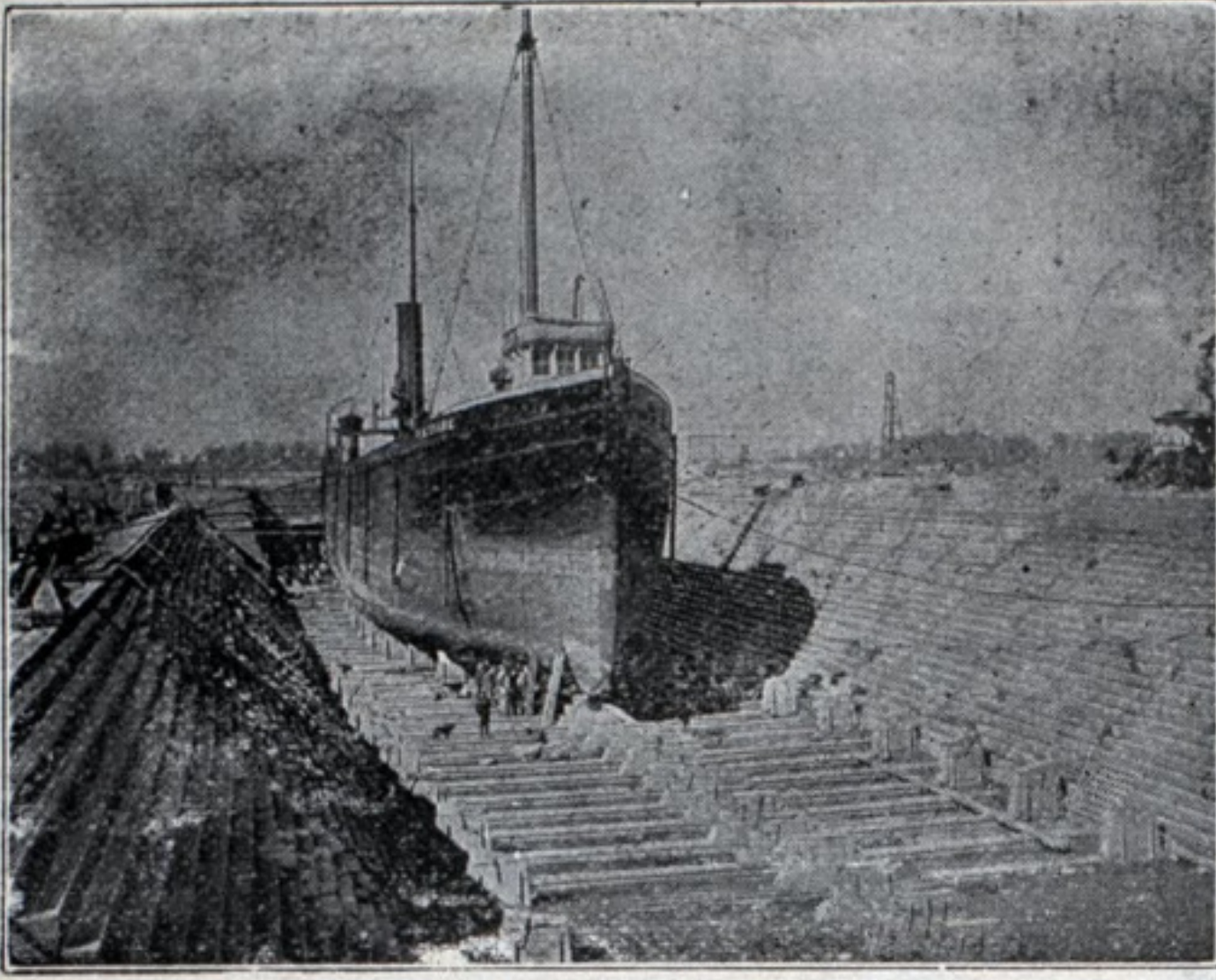
SHERIFFS MFG. CO.

ESTABLISHED 1854



MILWAUKEE, WIS.





Craig Ship Building Co.

TOLEDO, OHIO.

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

Repairs to Metal and Wooden Ships a Specialty.

Metal
and **Wooden**
Ship Builders.



Simpson Dry-Dock Co.

General Contractors and Consulting Engineers,

BUILDERS OF

Simpson's Patent Dry-Dock,

35 BROADWAY, NEW YORK.

SAFETY HOLLOW STAYBOLTS,

Manufactured from

BEST QUALITY STEEL OR CHARCOAL IRON,
Guaranteed to meet Government Specifications and Inspection.

FALLS HOLLOW STAYBOLT CO.,

Cuyahoga Falls, O.

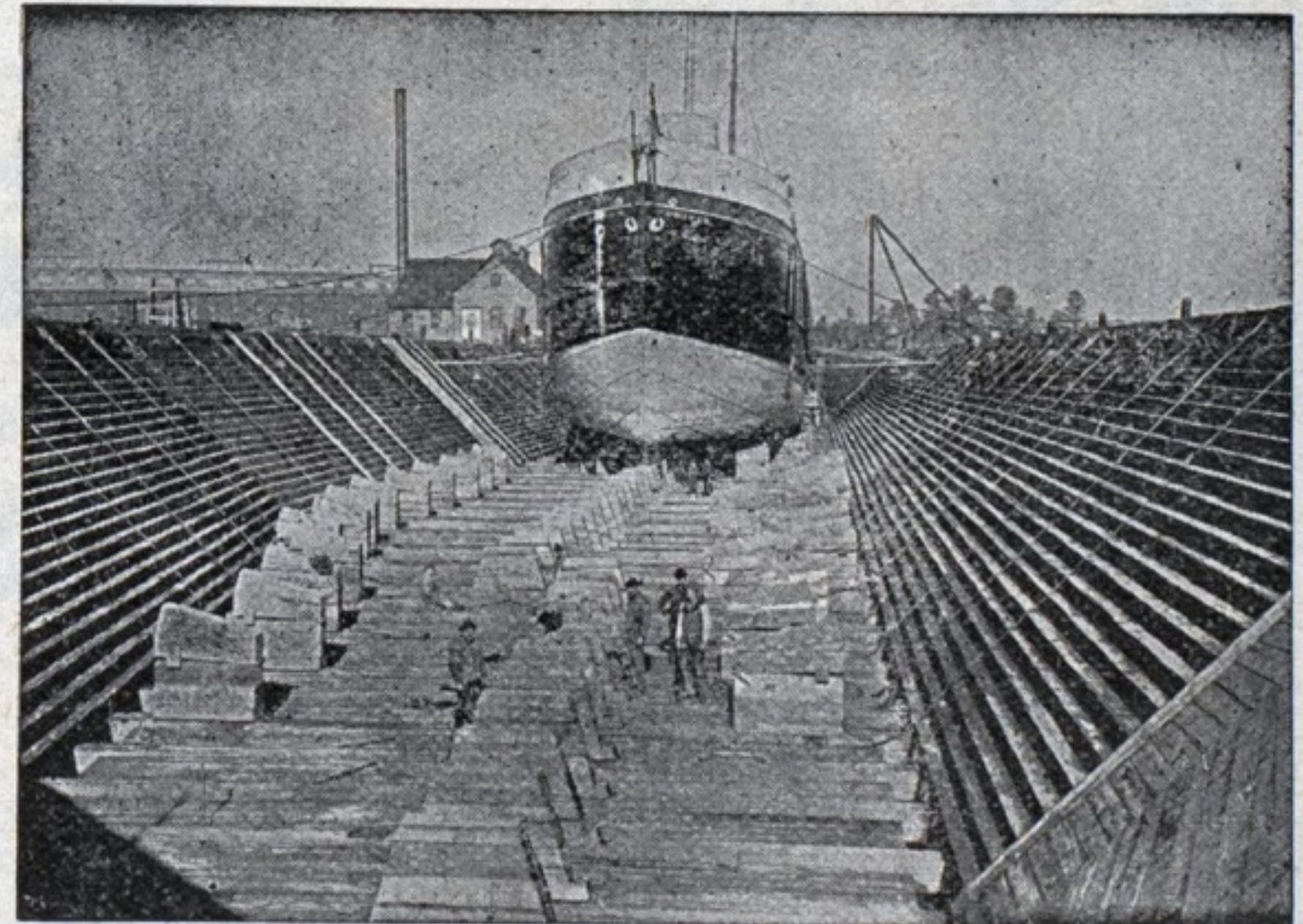
Write for Samples and Prices.

American Steel Barge Co.

STEEL AND METAL SHIPS

Of all Classes built on shortest possible notice at our yards at
WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300-FOOT BOAT IN DOCK.



Plates and Material always on hand to repair all kinds of Metal Ships in Shortest Time.

Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.

SIZE OF DOCK

Length, Extreme.....	537 feet.	Entrance, Top	55 feet 9 in.
Breadth, Top	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 "	Depth over Sills.....	18 "

LARGEST DRY-DOCK ON THE LAKES.

Prices for Repairs and Docking same as at Lower Lake Ports.

SUPERIOR, WIS.

A Number of Propeller Wheels in Stock at Dry-Dock.

LIFE BOATS.

YAWLS.

LIFE RAFTS.

DETROIT BOAT WORKS

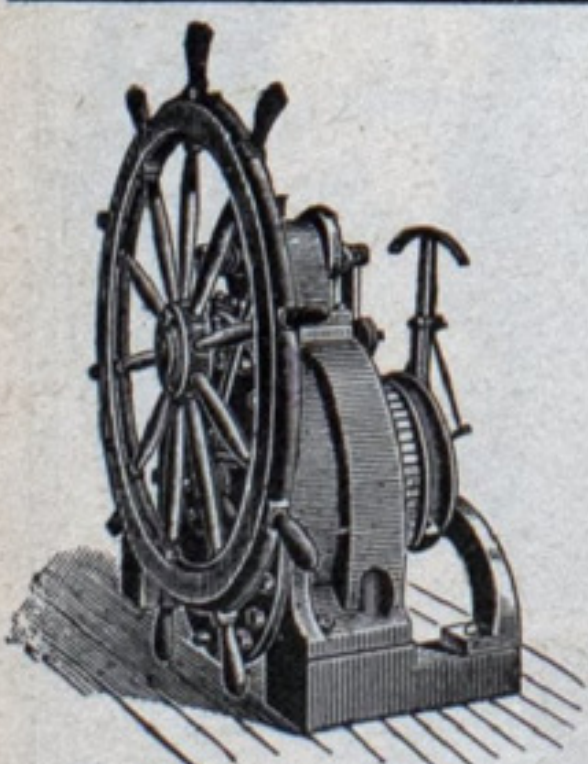
DETROIT, MICH.

STEEL, IRON AND WOODEN TUGS.

STEAM AND SAIL YACHTS.

ALL KINDS OF PLEASURE BOATS, FISHING AND HUNTING BOATS, SHELLS, BARGES, GIGS AND CANOES.

Queen City Patent Hydraulic Steerer.



The best and most reliable.

Generates no heat in pilot house.

Has large hand wheel.

Can be changed from power to hand steering instantly.

A favorite with pilots.

Send for References.

Queen City Engineering Co.

BUFFALO, N. Y.

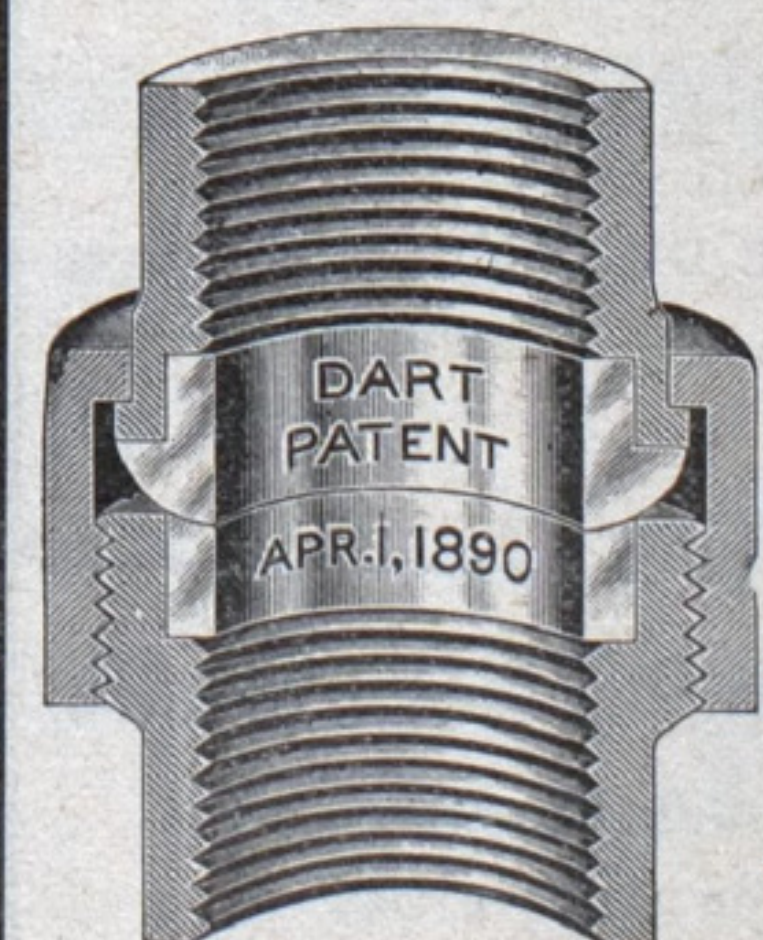
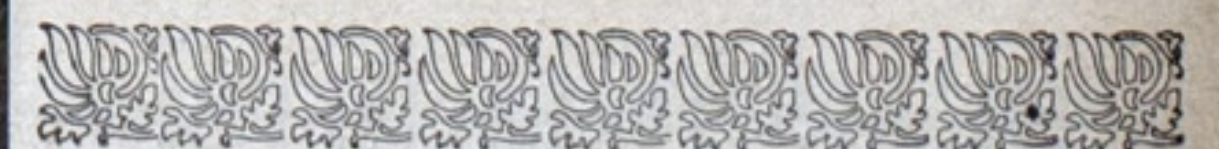
MARINE REPAIRING

AT MANITOWOC, WIS.

The Goodrich Transportation Co. are prepared to do all kinds of Repair Work to Machinery. Also Joiner Work.

Goodrich Transportation Company's Repair Shops include complete Carpenter and Joiner Shop. New Modern Machine Shop. Blacksmith Shop, including Steam Hammer, Punch and Shears, etc., Brass Foundry.

Repair Shops are adjacent to Dry Dock and are equipped with best Modern Machinery. Portable Electric Drills, etc., complete Electric Power Plant for supplying motors on board ships, and lighting. Night work a specialty. All work in charge of experienced and skilled mechanics. Charges moderate. Twenty-one feet of water alongside of shops.



The Best Union

Made in the U. S.



Mnf'd by the
E. M. Dart
Mfg. Co.

Providence R. I.
Send for circulars and prices.

